

Bob Cooper's

DECEMBER 15 2005

# SatFACTS

## MONTHLY



Reporting on "The World" of satellite television in the Pacific and Asia

### IN THIS ISSUE

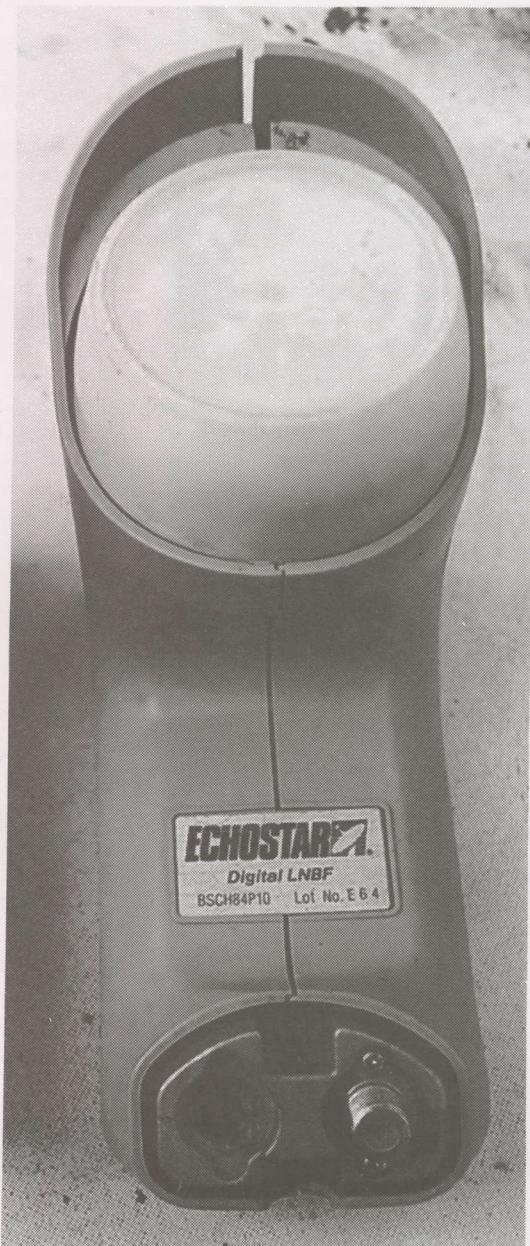
C-BAND  
SPECIALS:  
Tim Alderman

Good-Bye  
C-Band  
Analogue

ATSC DVB-T  
Problems  
Never End

✓ Latest Programmer  
News  
✓ Latest Hardware News  
✓ Dreambox problems  
✓ Observer Reports

Vol. 12 ◆ No. 136  
Price Per Copy:  
NZ\$10/A\$11/US\$/Euro8



# Hualin Pty Ltd

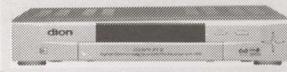
Satellite Equipment Specialists  
Import and wholesale

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For all prices, product information and banking details please visit the website or phone us.

## Specials this month

### DT800PVR - Digital Receiver



- 40Gb HDD = 40hr Record time
- 2x CI CAM Slots
- DiSEqC 1.2
- Fibre Optic Output Capability

Price: \$390 AUD + GST

### Satlook - Signal Meter



- Digital, Analogue and combined versions available
- A must for the professional
- Simple menus and functions

Price: Phone up for Quote

### DreamMAX - DT470



- Irdeto embedded
- 4900 Channel Memory
- DiSEqC 1.2
- User Friendly

Price: \$200 AUD + GST

## Everything? Yeah we got

### LNB

- Zinwell C Band
- Zinwell KU Band
- MTI C Band, Superhigh gain
- One Cable Solution - CBand
- Dual Output KU 11300 MHz

### Positioners

- Superjack EZ-2000
- Superjack DP-6600, DiSEqC 1.0/1.2
- Technosat DP-200, DiSEqC 1.2
- Manual Actuator Driver - EW101
- SAP 2000: 99 Memory positioner

### Actuators

- Superjack HARL-3618, 18" Actuator
- Superjack HARL-3624, 24" Actuator
- Superjack DG-120, H/H Mount

### Receivers

- SuperNET CA, Irdeto Embedded
- Success, Free-to-Air
- Dion DT-370, Free-to-Air Receiver
- Dion 2x CI, Hardware AllCamed
- ChangHong, Mediaguard embedded
- SuperNET Terrestrial, DVB-T
- Phoenix High Definition STB

### Dish and mounts

- 1.2, 1.8m Solid Prime focus
- 45, 60, 65, 85cm KU dish Offset
- 2.13m, 2.27m, 2.4m, 3.0m, 3.07m, 3.7m, Mesh Dish, Light and Heavy Duty PSI and JOYSAT Available

- CBand Wall brackets
- CBand Concrete mounts and stands
- KU Gutter mounts
- KU Wall mounts
- KU Float mounts
- KU Tinroof mount

### Dion 818 CI - Digital Satellite Receiver



- Slim Size and User Friendly OSD
- 2x CI (Common Interface) slots
- Hardware AllCamed

### SuperJack H-H Actuator, DiSEqC embedded



- All it takes is one coaxial cable....
- NO MOTOR CABLE REQUIRED
- DiSEqC Positioner EMBEDDED!

### Supernet - Terrestrial DVB-T



- Digital Terrestrial Receiver
- Slim Design
- High Quality Picture
- Easy to install and use

### Dion316 - Digital Satellite Receiver



- FTA + Software Patched
- 4000 Channel Memory
- DiSEqC 1.0/1.2 Compatible

Price: \$170AUD + GST

### Switches and Splitters

- 2 and 4 way DiSEqC switches
- 0/22kHz switches
- 2 and 4 way cable splitters
- V/H Multiswitch
- 0/12V Switch

### Cable - 15m, 25m, 305m packs

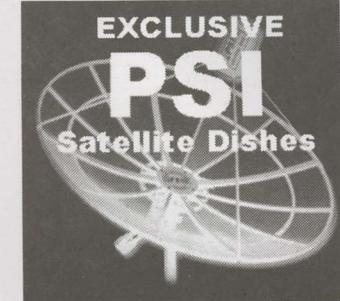
- RG6-U Dual Shield Coaxial Cable
- RG6-U Quad Shield Coaxial Cable
- Cat5 Actuator Cable

### Plugs

- F Connectors, Screw or Clamp types
- Cable joiners
- AV Splitters
- Cable Strippers
- Cable clamps
- Various other joiners and accessories e.g. RCA/SCART cables and converters

### Misc

- 2.4GHz AV Sender
- Irdeto 2.06B CAMs, Viaccess CAMs
- Satlook Digital Signal Meter
- Satlook Analogue Signal Meter
- Satlook Digital + Analogue combo
- Satellite finders
- Angle level measure instrument
- High Quality Compasses



# SatFACTS MONTHLY

ISSN 1174-0779

is published 12 times each year (on or about the 15th of each month) by Far North Cablevision, Ltd.

This publication is dedicated to the premise that as we enter the 21st century, ancient 20th century notions concerning borders and boundaries no longer define a person's horizon. In the air, all around you, are microwave signals carrying messages of entertainment, information and education. These messages are available to anyone willing to install appropriate receiving equipment and, where applicable, pay a monthly or annual fee to receive the content of these messages in the privacy of their own home. Welcome to the 21st century - a world without borders, a world without boundaries.

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our ELEVENTH year!

## COOP'S COMMENT

The CPU challenge. Dreambox was the first significant firm to bring out technology that allows one paid-up subscriber to a satellite or cable service to 'share' their authorisation with additional viewing locations through radio, telephone, Internet connections. The heart of the system is a 'blind spot' built into both Irdeto and NDS software where the authorisation sequence flowing from satellite can be 'internally grabbed' and then siphoned off to a waiting remote box or boxes.

There are two firms with the CPU (Central Processing Unit) chip technology that allow Dreambox (and the now numerous clones) to accomplish this task. IBM is one of these. And IBM is playing very difficult to deal with for Dreambox. In fact, since March of this year, the US firm has progressively tightened up access to this CPU so that today they simply have stopped delivering the chip unless there is Irdeto and NDS approval of the order. No, Dreambox is not on the 'approved buyer's list.

In Europe, there is now a programmer/security supplier 'Board' that must pass on all applicants who might wish to access various components for STB production. In September, Dreambox executives flew to London to meet with this 'Board' to try to work out what had to be done to allow them continued access to the CPU. They were told that while it was highly unlikely that a firm (Dreambox) with a business relationship with South African Rolf Deubel (Mad Max) would ever be approved, if they submitted a complete set of engineering data for the Dreambox products, and if the manufacturer would agree to some circuit modifications which the 'Board' would demand, then maybe - perhaps - they could get the needed CPUs again.

The software 'hole' which Dreambox exploits apparently could be closed with something insiders call a 'V Chip'. What they are saying to Dreambox, and others, is 'redesign your receiver so that a V chip closes the security hole and we will then approve your access to the CPU part'. Of course if Dreambox agreed to this, the reason many people stand in line to procure a Dreambox would be gone.

What is most intriguing here is that firms such as Irdeto and NDS have developed the clout to stop the sale of critical parts created and manufactured by totally unrelated third parties. Think of it this way: You wish to purchase a car and the car manufacturer is told you cannot buy it - although it is sitting there on the showroom floor ready for delivery - until the folks who sell petrol have approved you as a user of their product.

This is not a "feel sorry for Dreambox" story, rather it is intended to throw a spotlight on the wide reach that firms such as NDS and Irdeto now employ to protect their own proprietary conditional access systems. The Dreambox, let us be honest here, was designed to circumvent at least some aspects of both Irdeto and NDS. Dreambox software engineers, yes - including Mad Max - know where each system is crackable and they have created "after market" software to do just this (for example: NDS subscribers can share with other non subscribers). Dreambox proclaims its' innocence, of course, pointing accusing fingers at the "after market" software folks that hide behind web pseudonyms. But - the honest part - if Dreambox did not leave some software 'holes' in their own design (thank you, Mad Max and cohorts!), the after market folks would not have been able to marry add-on software to the basic Dreambox STB to allow one NDS subscriber to share his service with many.

Not to worry, however. The Chinese are on the case. An example: "The Angel Box" (<http://www.jsat.tv/abox.htm>). This new (sold in Thailand presently) STB has two tuners. By pointing one antenna at AsiaSat 4 and tuning in the 'speedcast' service, and a second antenna at a second satellite (delivering pay-TV services such as Astro, Dream TV, Multichoice, UBC, Telkomvision), the As4 feed provides the "numbers" to open up these services (all CA but made FTA with the AsiaSat 4 'numbers'). It is "over the air card sharing" without the annoying inconvenience of being connected to Internet for a subscriber's numbers. Translation? Pay TV without paying. Once again, for every hole that appears in the dike that is closed by the dike-master, someone creates a new opening. And the wheels of commerce keep on humming.

## In Volume 12 ♦ Number 136

C-band going-going-gone? (Tim Alderman) -p. 7

Sorting out America's ATSC fiasco -p. 14

C-band faces USA burial -p. 19

Murdoch's Internet buying spree draws fire -p. 20

## Departments

Programmer/Programming -p. 2; Hardware/Equipment Update -p. 4; Digital Tid-bits -p. 21; SatFACTS Digital Watch -p. 23; Supplemental Data -p. 26; With The Observers -p. 27

## On the cover

C-band in the land of greed and gluttony (USA). Is it all over? Tim Alderman suggests the world millions once knew and loved is fading fast (page 7).



December 15, 2005



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## PROGRAMMER PROGRAMMING PROMOTION

# UPDATE

DECEMBER 15, 2005

### **PNG observation**

"On a recent business trip to PNG, the hotel I was staying at had a satellite/cable headend room which I was allowed to inspect. There I saw a 17 channel line-up, primarily Star Bouquet (As3S). I noted receivers from SA, GI (with big green LCDs) a Zenith, Pace, Orion and something with NDS embedded. The modulators were all Ikusi. And a DVD multiple disk player turning over a small library of films. But the most impressive thing was the handy-man's attempt at a do it yourself PABX; cards laying around on the floor, a few red LEDs blinking to alert you all was - well, either well or not! And metres of hook-up wire lacing it all together!"

SM, New Zealand

### **Who's got the guide?**

"I am watching a lot of French FTA content from I701 and have become frustrated by the Canal + and RFO website program guides. Is there a weekly/monthly 'TV Guide' type of publication which lists these channels that I could subscribe to? Ideally, it might also have NZ satellite channels as well - but that would be a plus-benefit. I understand something called 'Tiki' exists which does this but have not been able to locate it. Can any SF reader help with this?"

Terry Cullen as [terrycullen@goosegully.com](mailto:terrycullen@goosegully.com)

### **3.5GHz in Hong Kong**

"I am employed by APT satellite in Hong Kong and the local telecom authority is in the process of assigning 3.5 GHz use here to terrestrial users; the UNwired type of service which I have read about in SatFACTS. What levels of interference are we about to face here?"

Power Pan, APT

as [aptorb2@apstar.com](mailto:aptorb2@apstar.com)

"Extended C-band" which covers 3.4 to 3.7 GHz is in fact within the passband of LNB(f) devices. The local and relatively powerful UNwired transmitters will literally overload the LNBfs - even if they are the older 3.7 - 4.2 GHz versions. The solution is MUCH better LNBfs and filters; see Microwave Filter Co. advert, this issue.

**UNwired UNdone.** A major break through in dual polarity C-band LNBf design has been announced by Garry Cratt ([cgarry@avcomm.com.au](mailto:cgarry@avcomm.com.au)). UNwired, for those joining us late, is the trade name of an Australian firm using spot frequencies between 3.4 and 3.7 GHz to provide "wireless" internet service. As SF has reported in detail, the UNwired terrestrial signals overload (as in over-powering) the amplification circuits in LNBs creating terrestrial signal overload and killing satellite reception in the 3.7>4.2 GHz region. Avcom's Cratt has led the effort to create UNwired-Proof dual pole C-band LNBs; the problem has spread with UNwired growth to Fiji and New Zealand. Try Avcom product # L 1550, retail A\$129 including GST with dealer and distributor discounts available. Bravo, Garry!!!

**Unlimited?** Australian authorities, the Office of Fair Trading, is cracking down on ISP (Internet Service Provider) operators who use the term 'unlimited' in their promotion and advertising. One phrase, 'unlimited hours', has drawn regulatory attention as the true measure of monthly charges is not in the hours on-line but rather the data rate totals (Mb/Gb/Tb consumed). Consumers have been alerted to the 'double talk' scam apparently in use; ISPs violating terms of OFT face financial fines of up to \$40,500.

**FTA terrestrial broadcasters** in New Zealand, specifically CanWest (TV3, TV4) and Prime, are not in a hurry to agree to any model of digital, whether it is distributed through terrestrial transmitters or satellite. In 2004, NZ's Labour Government leaders issued instructions advising state-owned broadcaster TVNZ and Maori Television to implement serious planning for the digital transition, without specifying how the change would take place. TVNZ's multiple plans to accomplish this, including one that would have used a combination of terrestrial transmitters and satellite, have largely been placed in the 'too hard to do' basket by the commercial competitors. An alternate proposal built around terrestrial-only distribution was presented to the TVNZ board late in October.

**What has happened** to public broadcasting objectives? TV5Asia, DW.TV, BBC and many others have all drifted from their original "service to ex-pats" world-wide that it is difficult to see how they presently meet their government charters. These services are public-funded, and the intent was to make available "home-town-TV" to their own citizens who are out of country. NHK "pretends" to do this with a much watered down version of NHK-Japan, in English and Japanese FTA, but if a Japanese citizen wants the "real thing" they must invest in an expensive (SA) IRD and pay significant fees monthly. And in the case of NHK, by being available only on C-band, the hapless would-be viewer is forced to deal with local building codes, "aesthetic" regulations before they can install a suitable antenna (for PAS-8). There is something wrong here!



## Gentle Reminder

"The 2006 Australasian Satellite Tradeshow and Conference is scheduled from March 2-4 in Launceston, Tasmania. We expect to have a wide range of informative and inspirational speakers including Tim Alderman who's articles written from California appear in SatFACTS with regularity. Information is available from the undersigned at 61 3 6344 4578 or Email [westernvideo@bigpond.com](mailto:westernvideo@bigpond.com)."

Brian Watson, Western Video

**What makes this one unusual is that it is 'home grown' and has the full backing and support of the Tasmanian tourist group giving it a level of 'government assistance' missing from many of the past efforts. Oh yes - Tim Alderman reports on the not very promising 'Death of C-band' in the USA in this issue, starting on page 7. Freudian slip - spelling "it"**

"I can but fantasise what Coop was recalling when, in VIDEO PIRATES, CD version page 325 he wrote, 'I know that. And that's why you have this', pushing the 38 calibre back towards me. 'This is my idea, Luis does not know I am giving tit to you. I like young, white guys. Just be careful when you stick it behind your belt it does not go off and damage something important!"

C. Sutton, NZ

**Tit? Good grief. There is one too many "t's in there - it was supposed to be "it"! In fact, the CD version of VIDEO PIRATES possibly contains even more alarming typographical errors. Reluctantly, the printed version has "it" correctly spelt. We warned that the CD version would become a 'collector's edition!'**

## Kenny Schaffer

"Your editorial dedicated to Kenny Schaffer (SF#135) possibly missed one of his problems: An allergy to kryptonite".

IF, Queensland

"I read someplace that Kenny also custom created elaborate guitars for many rock stars; true?"

David G, Los Angeles

While your editor was in New York during November three days visiting Kenny, we asked about this. This is one of Kenny's, "Oh yeah - forgot about that" forays in the 70s and 80s. Turns out he created many special guitars, including one for John Lennon which hung over Lennon and Yoko's bed displayed from the ceiling when the singer was assassinated. Then, there are the Jimi Hendrix 'connections'.

## HARDWARE EQUIPMENT PARTS

## UPDATE

DECEMBER 15, 2005

**Cold solder joints.** Just when you hoped nothing else would change, it does. Now it is solder. The UK (and other nations) have banned solder containing lead which means up to 50% of the content is now new and 'different'. It melts in strange-to-you fashions, flows in new patterns, responds to heat in ways you do not expect. There is more than a 'learning curve' attached to 'lead-free solder. Here are some tips from early users: (1) Temperature controlled iron is essential, (2) A short tip is highly recommended, (3) Expect higher melting temperatures than lead-solder (360C versus 350, and if working on a large copper pattern board, increase to 410C), (4) New lead-free is typically (but not always) 99.7% tin, 0.3% copper - there is also a 96% tin with 4% silver, (5) Lead-free appears to work properly with standard desoldering braid. Now, as to choices. These are UK brand names and may or may not reflect availability elsewhere. (1) X-39, no clean flux: Poor wetting characteristics, does not flow well. When redoing older lead solder joints, requires removal of existing solder first. (2) 502 no-clean flux. Not suitable for remaking lead solder joints. Side effects: Nasty smell, possibly not healthy! (3) Resin-flux. Works like lead solder, flows easily, actually works with prior lead solder. Negative: Leaves flux after reworking which must/should be cleaned off. Of the three tested, this one is most recommended

**On the table** is New Zealand's lack of courage to adopt a workable analogue to digital transition plan. Read the following, carefully: *"What I find sad about this, is the hundreds of thousands of New Zealanders who may no longer be able to access free-to-air rugby because they live in a part of New Zealand which has either poor or no Prime signal. We are concerned that up to 30% of New Zealanders will lose free-to-air rugby. On top of that is the tens of thousands of homes within (Prime terrestrial) coverage areas who do not have UHF aerials installed, and would have to incur aerial installation costs in order to keep watching free-to-air rugby."* Sky NZ has announced its purchase of Australian owned Prime TV with the likelihood present time-delayed free-to-air rugby through analogue TV3 will move from TV3 to Prime. TV3 is VHF, 188 transmitter sites; Prime is UHF, 30 sites giving rugby on TV3 a major edge of the same rugby on Prime. Now - substitute "digital terrestrial" (DVB-T) for "free-to-air rugby" and you have the nexus of why a terrestrial only digital world as currently proposed by BCL will create hundreds of thousands of disenfranchised homes. Turn off their rugby and watch consumers race to Sky to sign up; take away ALL of their FTA service and - well, watch the government change in 2008.

## JANUARY SatFACTS #137

Will not go into the mails until the 23rd of January; printer is taking a long holiday this summer. Sorry about that.

# Phoenix Technology Group

Satellite Equipment & Accessories One Stop Supermarket



Phoenix 2.35m Motorized Extra Heavy Duty Mesh \$180 each Buy 10 get one Free!



Folding Arm Dish  
best dish for caravan & camping  
64cm \$25/each  
78cm \$48/each  
88cm \$55/each  
North Elev Bracket \$5 each

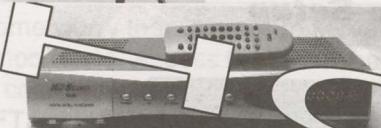
Irdeto 2.06B CAM	\$110	PBI C+Ku band LNB	\$65
Viaccess CAM	\$110	Zinwell C band LNB	\$35
65cm Azure shine offset dish	\$28	Zinwell Ku band LNB	\$25
75cm Azure shine offset dish	\$40	MTI C band LNB	\$25
85cm Azure shine offset dish	\$45	MTI one cable solution LNB	\$45
One leg gutter mount	\$18	Satellite finder	\$25
Two leg gutter mount	\$22	RG6 stripper	\$20
Tin roof mount	\$22	RG6/RG11 crimper	\$30
Wall mount	\$15	Angle meter	\$35
Superjack H-H motor	\$95	Compass High Quality	\$10
2.3m SD mesh dish	\$150	RG 6 Crimp Connector 100 pack	\$25
3m SD mesh dish	\$340	22K switch	\$10
3m HD mesh dish	\$380	Two way DiSEqC switch	\$10
3" 2.5m galvanised pole	\$30	Four way DiSEqC switch	\$12
3" 3m galvanised pole	\$35	Satellite 2 way splitter	\$1.50
3" 3.5m galvanised pole	\$40	Satellite 3 way splitter	\$2
3" Triangle Pole for C band dish	\$50	Satellite 4 way splitter	\$2.50
Speaker Stand for caravan use Ku dish	\$45	4 way multi-switch	\$35

Best performance



Paralipse 1.2m prime focus panel dish

**\$160/each**  
AZ/EL mount \$32/each



Koscom 1600A  
Irdeto Embedded Satellite Receiver  
\$200 with free Optus Aurora card  
Buy 10 or more and get 10% discount & one box of 305m RG6 cable for free



Phoenix 2800A \$110  
The Best FTA Available  
Quantity price available



Dreamax DT470 \$160/  
each Irdeto Embedded  
Satellite Receiver



Zinwell 15K  
LNB \$28/each  
for box of 24



Moteck SG2100  
Motor \$105/each



SuperJack EZ2000  
Positioner \$50/each



Moteck V Box II  
DiSEqC1.2 Positioner  
\$65/each

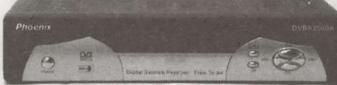


Actuator from 12' standard  
duty to 36' heavy duty  
From \$35/each to \$220/each

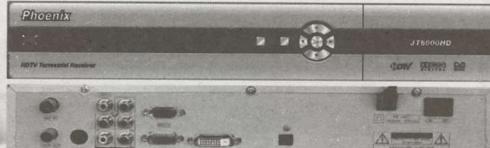


RG6 Cable  
Dual shield  
\$65/box  
Quad shield  
\$75/box

Phoenix JT3300A  
Digital Terrestrial Receiver  
**\$110-1 buy \$99.5 buy**



Phoenix JT6000A High Def Receiver  
with DVI output December special \$290ea



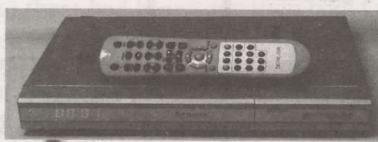
## This Month Special

### Optus B3/Pas 8 Free To Air channel Package

5x Phoenix 2800A digital satellite receiver  
5x 64cm foldable arm dish  
5x 11.3GHz/10.7GHz/universal  
Ku band LNB your choice  
5x Gutter mount/wall mount  
One Box RG-6 Cable

**\$975 (\$195/each x5)**

### Magix 9600 \$145 ea our clear out price don't miss out with embedded cam and 2x cam slots



### Optus B3/Pas 8/Optus C1 Irdeto embedded channel Package

Koscom 1600A Irdeto cam embedded digital satellite receiver x 5  
64cm foldable arm dish x 5  
Zinwell 11.3GHz/10.7GHz/universal Ku band LNB x 5  
Gutter mount/wall mount x 5  
One Box RG-6 Cable

**That's only \$255 each**

**\$1275 5 Unit Package Price**

### C band free to air channel Package

5x Phoenix 2800A digital satellite receiver  
5x 2.3m SD mesh dish  
5x Zinwell C band LNB  
5x 3" 3m galvanized pole  
One Box RG-6 Cable

**That's only \$395 ea crazy!**

GREAT FREIGHT  
DEALS TO N.Z.  
CALL OR E-MAIL  
FOR A QUOTE

**\$1975**

### Paralipse 2.6m mesh dish

**\$1500, (300/each x5)**

Easy transport

Last stocks of  
mesh dishes  
from USA

### Multi-beam 1m offset dish

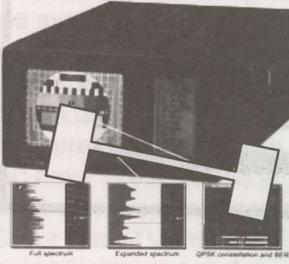
Ku band satellite from  
Optus B3 + Optus C1 + Pas  
8 + Pas 2  
Just one dish to receive all

**\$150/each**

Up to four  
LNB  
30 deg.  
wide



### Made in Sweden



### COMBO \$2295

The combination of SATLOOK Digital NIT and TVLOOK  
• Input frequency: 2-900 MHz and 920-2150 MHz  
• 4.5" B/W Monitor for PAL/NTSC/SECAM  
• Lots of memory positions for spectrum pictures  
• RS232 for PC-connection  
• Built in, rechargeable battery. Only 7kg complete with carrying case.

TV-PART:  
• 2-900 MHz spectrum analyzer  
• Presents full range spectrum (and expanded)  
• Very high accuracy, ±1dB (at 20°C)  
SAT part:  
• 920-2150MHz spectrum analyzer. Digital BER, QPSK and SNR rates  
• Satellite ID and TV/Radio/channel info (NIT)  
• Tunable audio bandwidth 5.5-8.8MHz  
• LNB voltage 13/18V, 22kHz tone switch

### SATLOOK

## Dealer Inquires Most Welcome

## Come To Us For Bulk Buying Deals

21/148 Chesterville Rd. Moorabbin VIC 3189  
Website: [www.phoenixtelevision.com.au](http://www.phoenixtelevision.com.au)

Phone: (03) 9553 3399 Fax: (03) 9553 3393  
E-mail: [sales@phoenixsatellite.com.au](mailto:sales@phoenixsatellite.com.au)

US.MOO.SATellite.SUPERMARKET.COM

www.phoenixtelevision.com.au



"Hiding" a Ku band dish would shortly become the least of my challenges! C-band forever!

My heart sank lower, the giant money machine corporations, that control access to the 'public park' known as the Clarke Orbit Belt, had once again said 'no' to the last 500,000 or so die-hard C-band users. SA also commented, "The service has switched to PowerVu format". After a few minutes that rang a bell. "Wait a minute - I have one of those receivers (collecting dust on a shelf)!"

But first I had to swallow that the continuing service, PowerVu format, was on Ku and I retained a stiff level of anti-Ku bias. But - History was waiting. Hummm. Maybe - just maybe - I might 'allow myself' to install one of those 'stinking small monopoly dishes' on the side of the house, where nobody would see it?



The VOOM lady, Kelly Dalton, happened to come by for a visit to my dealer friend and part time employer, Myron. I had talked with him about the new service, and Myron was encouraged enough to see if VOOM might allow him to re-enter the residential market. What made VOOM unique were 21 HD (high definition) channels, far more than anyone else although being practical and not possessing a HD display system, this would be a side-show for me. I wanted my History Bistory Channel, back, all be it a rather expensive solution. Perhaps I could locate two others to split the cost of the VOOM package?

Myron had hired me to install my custom UHF DVB-T feed (see SF#120 for report) as well as trying to bring in additional HD channels offered within VOOM. He also talked me into something new, for me: Leasing equipment. The low-to-the-ground VOOM feed came from 61.5 West, very close to our horizon in the San Francisco Bay area. After seeing a demonstration of VOOM at Myron's facility, I was convinced and would pay one-third of the VOOM monthly fee of \$65. Never mind the fact that I was supposed to personally keep the three IRDs in my home - the VOOM rep confided, "It will be at least two years before we require them to be connected to your phone line", a way around me retaining one and passing two others on to others. I did the DBS dish on the back of the house where nobody could see I had become a traitor to my beloved C-band.

#### VOOM - it too would close down

March 2005. NPS has somehow managed to convince A&E Networks to allow Digicipher to access their HITS (2) feed on Galaxy 4 Ku, the same feed which is supplied to cable systems. I immediately subscribed to the 'extraview digital package', \$160 per year creating 42 new channels on top of the 65 from VOOM. I was happy as a pig in a mud pen.

**2/ HITS -'headend in the sky'.** Cable's larger systems created a single satellite 40 channel service to serve smaller cable systems - for a fee.

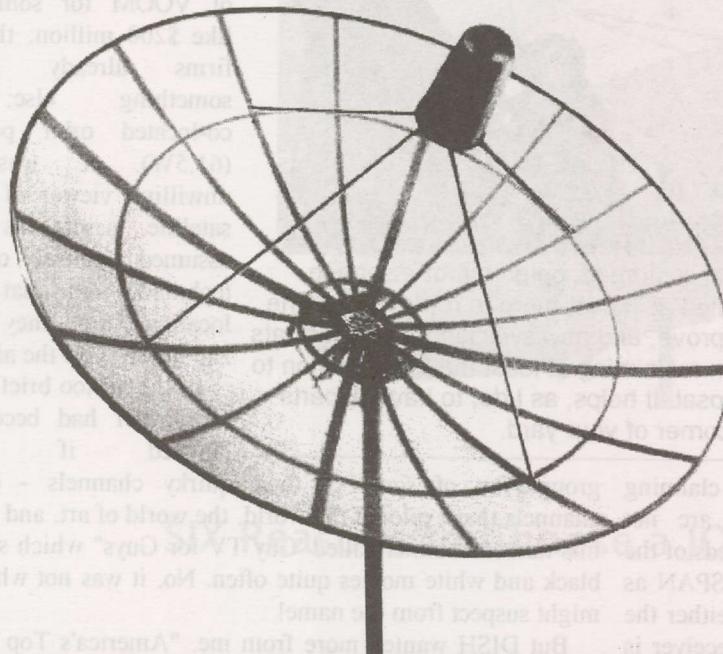


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No soldiers left standing. Originally, when Ku customers opted out of a service, antennas and LNB parts were left where installed as it cost more to retrieve than the reclaimed value. When technology began to improve, and new switching LNB formats evolved, firms such as DISH and DirecTV began reclaiming at least the LNB portion to purposefully render them useless before disposal. It helps, as I do, to have a 'parts boneyard' stuck away in a corner of your yard.

It was here I discovered what so many have been claiming as 'truth' for some months and years - there are not insignificant quality differences between different feeds of the very same (identical) service. CNN on VOOM, C-SPAN as well, had analogue tearing (such as one sees when either the receiver is below threshold or - more likely - the receiver is set one or two MHz too high or low). I also found that History Bistory was not nearly as sharp, clean, clear as it had been on C-band analogue. Still, what VOOM had on offer was a most eclectic mix, often genuinely entertaining, informative or both simultaneously, and my happiness was on a new high. Alas, it was not to last. Cable 'gives' and cable 'takes away'.

On April Fool's Day, VOOM took down their useful web site and in its place, said they were going off the air at the end of the month. This was not a joke. The New York Times newspaper reported in a pair of articles about a 'boardroom battle' between a father and a son who controlled the cable firm that also owned VOOM. The father's dream had been to create VOOM while the son was siding with a growing majority at the board level than wanted to cut their VOOM losses. April continued to be confusing - first the announcement, then a counter announcement saying "VOOM is adding channels". Simultaneously, something equally strange was happening at NPS - the programmer packaging firm. They had a new CEO and his first mission statement was to announce NPS would 'bring back missing channels' - including History and Turner Classics. It was all very confusing. And deceptive.

VOOM ended in a bang (boom!!!) when the son gathered the boardroom votes to get his father thrown out and a burial date for the service confirmed. The firm, Cablevision, moaned about investing \$800 million in launching the service which according to press reports had attracted only a few thousand folks like me - sending them money each month. DISH's Charlie Ergen and DirecTV's Rupert Murdoch obviously had not much to worry about - VOOM was not a threat. In fact, VOOM seemed to become a pawn in the really big game that pits DISH's Charlie Ergen against the world

groupie-fan of some of their quirky channels - offbeat channels that explored the world, the world of art, and even a mis-named channel called 'Guy TV for Guys' which showed black and white movies quite often. No, it was not what you might suspect from the name!

But DISH wanted more from me. "America's Top 60" (a group of mass-appeal channels). They announced an offering of "Ten Original VOOM Channels" for a paltry \$5 per month. Alas, there was a catch-22 to this offer, which pretty much defines everything to do with either DISH or DirectTV offerings. If I agreed to pay Ergen's DISH \$5 a month as an 'access fee', and, I also agreed to subscribe to the DISH HD package (an additional \$9.99 monthly), then and only then could I have the original ten VOOM channels.

Such is the temptation of programming from satellite. At about the time one becomes comfortable with the channel choices and the scheduling of some of these as 'favourites', the marketing plans change and you are left to flounder in a sea of endless duplication and Fox-style programming.. This was not like C-band at all, where the total lack of scheduling for many of the 'feed channels' made them interesting and allowed you to assume a passive role of 'interested observer'. But out of desperation (one result of their endless marketing to suckers like me) I popped for the 'DISH Pro 811 HD' IRD. It was the only way I could claw my way through their endless packages to select at least the majority of what it was that attracted me to satellite to begin with. And then the troubles began.

The 811 would prove to be no sweetheart IRD. In fact, 'a real dog' is a better description. One of the local free-to-air channels, educational broadcaster KQED, offers five digitals in addition to their original analogue. This is PBS, the national public broadcast service paid for substantially by US taxpayers. To the best of my knowledge, no commercial station in the US currently offers five digital channels (in addition to their analogue single channel). KQED, as part of their trials in digital, does something called 'dynamic channel remapping' each evening at 8PM - turning off 3 of their SD

straddling king of all media, Rupert Murdoch with his DirecTV. As April 30 approached, announcements appeared advising, "VOOM lives on, on DISH Network". Reports said DISH had acquired the satellite assets of VOOM for something like \$200 million; the two firms already shared something else: a co-located orbit position (61.5W). I was an unwilling viewer of DISH satellite assets as they assumed control of the technology in that orbit location. Surely they would zap my IRD off the air?

In the all too brief era of VOOM, I had become a

devoted if small

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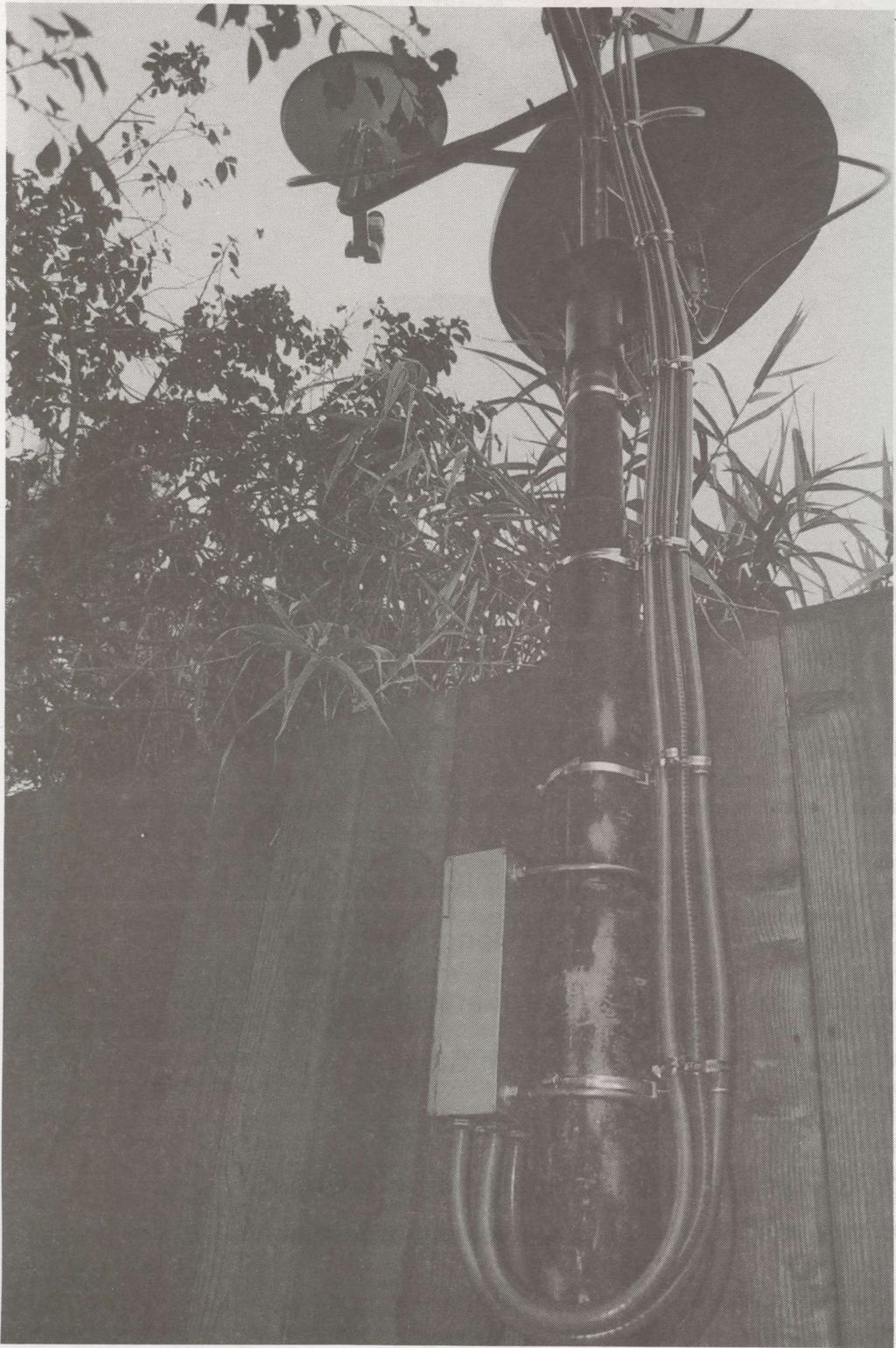
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**Making the best use of available space. Fence mounted steel pipe provides 'platform' atop which multiple dish arrays can be 'stacked' and arrayed.**

digital channels and replacing it with one HD service channel (it is that 'bandwidth' thing).

My original ATSC DVB-T tuner supported this; not Mr Egeren's 811. Not only does it refuse to remap, it goes (to put it mildly) catatonic. When attempting to remap, it shuts down completely - losing even satellite reception (yes - the 811 is a multi-function claimed device doing both DVB-T and DVB-S). The answer was unplug, do a master reset but when it comes back, everything is gone - everything, requiring a brand new set of reprogramming of favourites. Good show, Charlie.

seems straight forward enough to me - you start on say 1 May and from then until October 31, six months, no \$9.95 charge followed on 1 November by the monthly fee. Seem's simple to you too, right? Wrong.

It turns out the \$9.95 per month is only 'free' if you make a purposeful telephone call and they make an 'adjustment' on your records. Worse yet, you have to do this *monthly* for six months! Failure to make that required calls is grounds for them charging you from day-one. If you have ever been tempted to enter one of those 'reader's sweepstakes' contests, where when they say 'print your name' and you write it in

I pounded on Myron's desk, "Egeren sold me this piece of crap, this IRD goes berserk when KQED remaps nightly. Their customer support knows of this and they claim no fix is available. I want my money back". So I packed it up, every last piece of cable, literature, warranty card - and returned it to Myron's shop. Well into June, some 45 days later, I was perplexed; no refund had been forthcoming. Two weeks later after more complaining a call, "Your replacement IRD has arrived". Huh?

It turns out the only way to get anything for the \$355 I had tied up in the IRD was to accept the 811 unit and proceed from that negative starting point, dynamic channel remap failure and all. Of course the 'refurbished' unit arrived short of essential parts - the remote control, in particular. Calls to DISH resulted in a non-believer insisting I pay \$49.95 for a replacement - for the RCU that was missing because they messed up. Nuts to you guys - I went to eBay where I found dozens of 811 remotes some priced at \$2.95. Eventually I did receive some of the missing parts (which had included cables, and manual for the 811 - the latter I paid \$10 to acquire!) So as you can see, when they screw up, it is always in their favour and while the 'going in price' may seem very attractive, DISH will get even with you over the small pieces.

The convoluted trail to a successful business-like subscription relationship between me and them grew worse. One of the incentives was 'six months free' for the \$9.95 per month 'HD pack'. That



Atop the fence mount array, 5 Ku band dishes, two of which are 'inverted' to lower wind resistance. Ku? Got you covered!

script becomes grounds for disqualifying your entry - well, DISH has learned a few 'tricks' from this sort of customer promotion. Get out your magnifying glass folks - read the very small 4 point (type size) material, and it will help if you have an attorney, and a consumer advocate as well, read the fine print on your behalf. 'Free' does not mean 'free' and 'trial' does not mean 'trial'. It means, "We have your credit card number now - good luck!"

#### Which service should be offered?

At some point, the penetration of DISH and competitor DirecTV has reached a level where people - consumers - expect it at various locations, just like a telephone. Cable, the guys in black hats until you encounter DISH and DirecTV yourself, would prefer of course that people 'expect cable' when staying at a motel, or living in an apartment building (MDU).

Once you get beyond the realisation that the satellite guys are no more concerned about ultimate customer viewing satisfaction than the original black hat cable folks, as a system designer and installer in the United States you are presented with a 'which service?' choice. It is not an easy one.

Technically, there is little other than the encryption format to differ one from the other. Often they share a common satellite so the dish + LNBf hardware is similar if not identical. My concept was that it should be possible to install an 'either - or' antenna system, kind of a 'DBS antenna farm' on the roof of a building, and then somehow make it possible for individual outlets to have a selection between DISH and DirecTV.

The antenna. I would experiment with a pair of 1.1m offset style Ku band dishes. Most people mount them so they are more or less vertical but of course (you should not be surprised here) if you turn them 90 degrees and lay them more or less on their side, they work just like the vertical format, only they present a much smaller 'sail' to the wind (see photo, above). 'Mushroom' is my personal preferred mounting style, although flipping the dish around to reduce the wind load may present some structural challenges to the guy doing the

mounting. It is worth the effort, believe me! Just remember - stress on a consumer grade of Ku brand dish is an invitation to reception disaster - if the dish loses its factory shape by even 20 thousands of an inch, the gain is reduced. A warped (and man do they warp easy!) dish is no fun to straighten out, if in fact it can be done at all.

The next issue is the LNBf. Ergen's DISH uses a 'non-standard mount' that connects the feed to the button hook rather than the more conventional DirecTV mounting arrangement. DISH has done other things to make their hardware unique - a polite way of saying, 'buy the hardware

from us as a *sole source* or it will probably not work for you'. When DISH launched 11 years ago, there were numerous LNBf suppliers and they all pretty much conformed to a standard method of mounting and design. By 2004, DISH had 'corrected' this competitive oversight by creating hardware that gives them a monopoly over both ends of the game. It is the American way; take out the competition by establishing 'standards' which only you or your preferred supplier can meet.

DISH began their pathway to eliminating competition by announcing 'DISH PRO'. On the surface it seems like a good engineering decision. Competitor DirecTV has used standard 13/18 volt powering to select between polarities; the 13V line has one output F connector at the LNBf, the 18V a second output line. You run two lines to the receiver and it selects between V and H (or RHC/LHC). DISH PRO stacks 950-1450 and 1650-2150 onto a single cable; logical on the surface.

The switchover from twin polarity - one cable, to twin-polarity two cables, to twin polarity - one cable left millions of units in the field which were at best compatible only with great difficulty. DISH had a chief designer working on this problem and when it has it worked out, in the true spirit of becoming an entrepreneur, legend has him jumping the DISH ship and ending up in Korea with his own design. 'Microroyal' is the Korean firm that resulted, and it sells Dish Pro compatible switches using the DiSEqC world standard through eBay outlets for a fraction of what DISH charges.

The 'switch' receives commands from the IRD as to which satellite (both DISH and DirecTV use multiple satellites to gain their 500 channel universes) and which polarity is chosen for viewing.

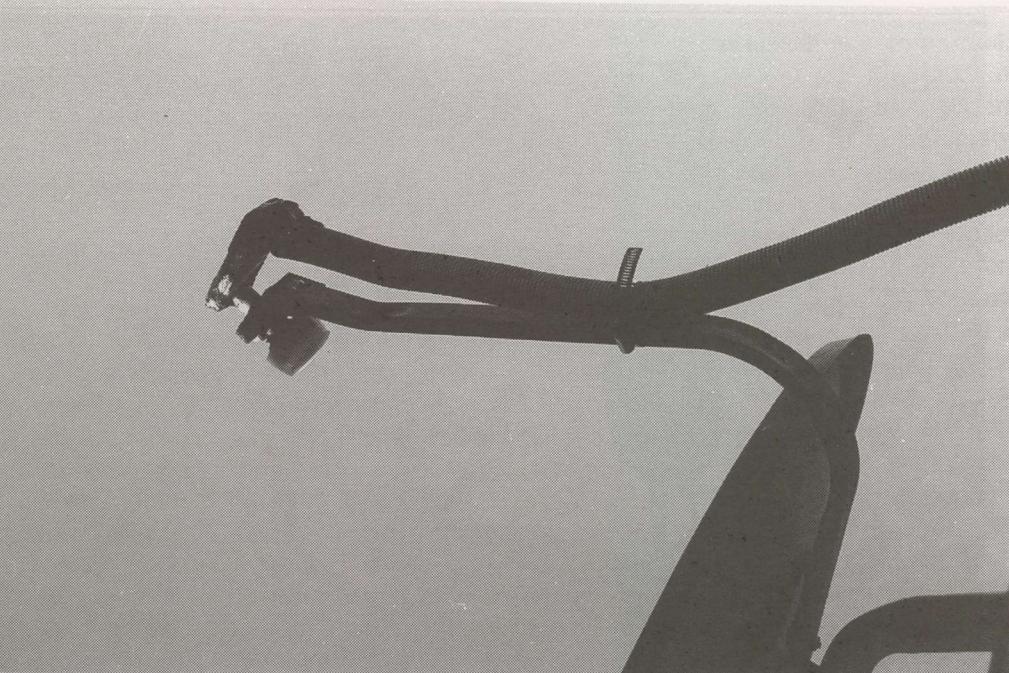
DISH countered with 'DISH PRO PLUS' which created a system wherein switches will only 'talk to' Dish Pro (brand) LNBf's; the LNBf's simply do not have the 'language capability' to talk with Korean competitive challengers.

Meanwhile, DirecTV, which manages as a giant to sort of lumber along, was slower to stay current with the technology at DISH. They were slower to adopt the single dish

(reflector), multiple-satellite approach that DISH pioneered in North America. To play catch-up, DirecTV has opted for a three satellite system with 9 degree spacing between the birds. Their resulting dish is called 'oval' because it is more like the original dish laid on its side than any of the original offset reflectors. DirecTV began with transponders at 101W ('Sat A'), added a second at 119W ('Sat B') and then finally shoved 'Sat C' in the middle at 110W. The 110 satellite requires a different LO (local oscillator). To make both systems play requires a multitude of dishes, feeds, LNBf devices. To test the DirecTV service, I spent \$5.99 per month to receive 'local into local' (all local terrestrial TV stations fed as a group). A similar package from DISH also costs \$5.99 a month and in my west coast case, 'local into local' comes from 148W. So here I was, six Ku band dishes installed, covering the arc from 61.5W to 148W!

DISH wants to ensure that people do not 'trade' in ex-DISH equipment and for this purpose engages a 'satellite salvage' firm to gather up abandoned or out of service-use LNBf items and 'ruin' them for additional service. They do this by ripping the plastic feed cover from the LNBf before disposing of the remains. This exposes the inner workings of the feed to the elements and in short order they decay to a non-reuseable state. I found these items for a pittance on eBay and from several extracted the LNBf throat which could then be attached to a standard buttonhook feed support tube. Mounting? Electrical tape and Scotchcoat for weather protection.

Which left one remaining problem; around 70 metres distance from the sixth dish and the other five. RG6 loss was



Take a piece here, another piece there and innovate by using bone yard or eBay sourced mechanical parts. On eBay, enter 'satellite salvage' for a direct trail to tons of parts!

simply too high, even with 64-66 dBuV at the dish. The answer was to switch over to RG-11/U for the distant dish so that the Microroyal DiSEqC switch would talk with the 811 Dish Pro IRD.

#### Temporary peace of mind?

So here I sit in signal gluttony land, thousands of channels raining down on my head and yard, battling to hand select a very small number that actually appeal to me, and for which I have either a budget or an ability to afford. I can once again watch my beloved History Bistory service on C-band, and have gained a wealth of unintentional first hand experience with the wonders of not only Ku-band reception but more important perhaps the way that 'small dish' customers are treated by the twin powers in the sky. I am looking forward to having an opportunity to share my experiences with others while attending the Satellite 2006 conference in Launceston, Tasmania (March 2-4) in 2006. Alas, I may be one of only a few attending who still retains a functional C-band system!

#### Some hard numbers on USA's ATSC

## Arguments erupt over when there is - is not, adequate coverage for digital

It is of course all about money - as most arguments are in America these days. One satellite service provider (DISH Network) argues that regulatory body FCC decisions concerning whether an individual home qualifies to have access to satellite reception are imprecise and incorrect. The television broadcasters, anxious to avoid having their markets carved up by the further incursion of homes connected for reception to Ku-band satellite dishes are arguing the counter-point: The FCC rules are not strict enough. It all comes down to who's measurement technique

do you believe and in a field shoot-out, who's field strength meter / signal level meter is most accurate. There are almost endless opportunities to 'massage' the numbers, both on paper and in the field. At the end of the trail, millions of homes that would become available to the satellite delivery folks if the FCC admitted its present measurement criteria is flawed, or conversely, remain 'stuck' with service from TV stations which the FCC the homes must/should/will be contented to receive. And the history of all of this dates back into the 1950s when analogue services were established.

Under FCC rules, a TV station submits its proposed coverage area based upon a combination of factors, of which the four most important are:

- 1/ The height of the TV transmitting antenna "above average terrain" (AAT)
- 2/ The transmitting (radiated) power of the TV transmitter (EIRP)
- 3/ The frequency (low-VHF, high-VHF, UHF), which has a direct impact on how far the signals will travel setting aside the AAT and EIRP factors
- 4/ Interference from other stations on the same, or adjacent (in frequency) channels (co-or adjacent channel interference being a limiting factor)

When the original analogue TV reception began in the 40s and 50s, brave viewers installed tall towers, large antennas, and the ancient equivalent of masthead amplifiers and barring co or adjacent channel interference received (and "watched") television from stations out to 300 miles distant. But as the number of stations multiplied, past the 108 operating in 1952, to nearly 10,000 today, the channels became clogged and co or adjacent channel interference significantly reduced a station's "reach". It became increasingly difficult, then impossible, to "watch" a TV station 300, 200 or even 100 miles distant as newer stations came on the air 50 or 10 miles away. In theory, those people who invested hundreds and thousands of dollars to watch TV with huge antenna arrays and tall towers would be more than happy with local quality TV watchable on rabbit ears or simplistic in-attic antennas.

Cable TV developed at about the same time as the station explosion raced past 1,000 TV transmitters on the air, and using sophisticated technology that was far too expensive for individual homes to duplicate, cable continued to offer 'distant stations' which would ultimately become a major reason for cable penetration (percentage of homes subscribing) grow rapidly to past 50% of all homes in the USA, and then into the high 60s and low 70s.

During the 80s, the FCC was under increasing pressure to make "more stations available" and they responded by relaxing the mileage separation criteria, allowing new stations (full power, low power, translator) into the very edges of pre-existing "coverage patterns" which had the predictable result of further eroding the total area an individual station reached. As more homes lost reasonably quality reception to interference, cable grew even faster.

Cable's penetration rate had an unfortunate side effect; equipment for rooftop aerials disappeared from the market, as sales dwindled, and all but two 'name brand' antenna manufacturing firms left the business. Whereas in 1960, an estimated 42% of all US aerial equipped homes included a motorised device called an "antenna rotor" in their systems, by 1980 that number had dropped to under 10%. Predictably, firms designing and marketing antenna rotors went out of business and on those left available, prices soared. Which caused sales to drop further.

Unlike most other countries, American telecasters were scattering their transmitting antennas all around their markets; a rooftop antenna pointing north was required for one or two channels, another pointing east for another channel, yet another pointing south for two more channels. Faced with either complex multiple antenna arrays combining channels into a single downline, or one antenna with an

antenna rotor, the hapless viewers found a \$25 connection fee for cable (eliminating rooftop aerials and rotors) an easy decision. Cable, again, was the beneficiary.

And then there was the 'predicted' versus 'actual' coverage variants. A station planner sitting in a pristine office could calculate and extrapolate to a map just how far the 1,000,000 watt transmitter using a transmitting antenna 1,000 feet above "average terrain" would reach. Alas, the reality was always (not sometimes) significantly different than that map presentation. However, and here is the argument coming, the FCC accepted the map as a 'technical exhibit' when a station applied for a permit to build and operate. The map essentially ignored localised factors that could and would affect actual reception ability for a potential viewer at co-ordinates 112 and XX3 (or any other location inside of the largely circular 'predicted' coverage contours. A hill here, a 12 story high rise apartment there, a massive steel bridge crossing a river - even a thick area of forest - interrupted the nice clean map projected coverage. The map said there would be 1,000 microvolts of signal on a dipole antenna ten metres above ground at 112 by XX3 when in fact there was 50 microvolts.

Station operators ignored these anomalies because station management was 'claiming' coverage to any home inside of the predicted contour. The FCC went backwards into a time tunnel and explained, when shown an anomaly, "predicted coverage" is a 90/50 (or 50/50) situation - "We accept that".

"90/50" means 90 percent of the homes received the predicted signal level 50% of the time, while "50/50" means half the homes half the time. The stations, however, when charging money for advertisers, collected (and collect today) "100%/100%" - all of the homes all of the time.

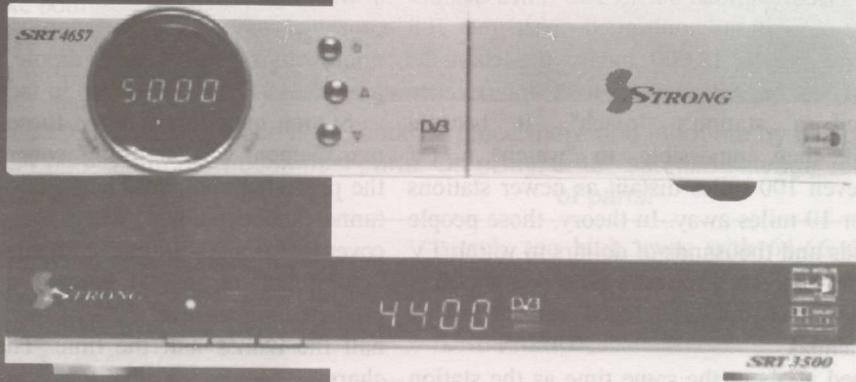
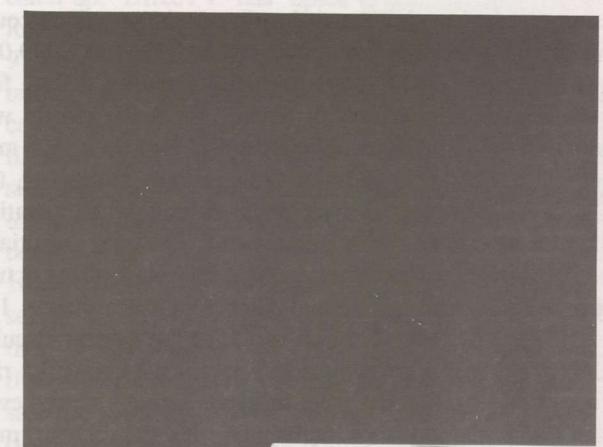
A tangled web do they weave.

In the 90/50 coverage area, ten percent of the homes have less than the predicted signal level all of the time. And for the 90% that have reception, the FCC only requires the reception to be "adequate" half (50%) of the time.

#### Along comes satellite

As Ku-band (DirecTV followed by DISH) services developed, they sought to sell consumers their reception packages without respect to where the homes were located. The FCC said, "No - you may sell a home but it will only be allowed to receive 'local' terrestrial transmitters through satellite (or through a non-existent rooftop aerial)". In other words, if a home was located inside of the "predicted signal coverage area" of a television station from Chicago, the satellite service could not deliver channels from Milwaukee because stations from Milwaukee would "violate" the commercial zone of influence for Chicago stations.

There are a host of reasons why a potential satellite subscriber might hinge his or her decision on whether or not they could have, via satellite, Chicago, or Milwaukee, terrestrial channels (essentially, in America, all terrestrial stations are now available to Ku-band satellite subscribers but only those stations which the home 'qualifies' to receive). For example, for years and decades, because their location does not favour Chicago reception (hills, trees, tall buildings, interference), they have been watching Milwaukee FTA off-the-air channels. Losing those channels, as a condition to buying DISH or DirecTV, is a non-seller. People grow accustomed to certain 'local' channels and are not in a mind to change to new satellite delivered 'local channels' simply



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the FCC uses "leverage" for some countries

as well as the price which is higher

and the cost of the equipment



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Which brings us to why DISH TV wants the FCC station coverage rules changed, using the transition from analogue to digital as an opportune point in time to try to force this change.

#### It is all about available signal level

DISH TV argues, with reams of engineering data, that the FCC rules should reflect "reality", not some engineer's pristine and idealistic representation of coverage - as FCC filed maps indicate.

Hiring skilled high level name brand engineering consultants, DISH found that in 76.8% of locations measured in the Seattle (Washington) "market" had as a minimum the predicted signal levels; 23.2% did not. In 15 different television market tests, the average was 90% did in fact have the predicted signal levels and 10% fell below that number (remember the 90/50 rule). In 2,047 individual test locations spread nation-wide, 94.4% of the locations did in fact have "the predicted signal level" available (some of these were the predicted level but the predicted level would be below minimum levels for "threshold" digital reception).

DISH TV (Echostar Corp), however, wanted the Commission to recognise that over the decades since these measurement criteria were established, the options available to the consumer have diminished appreciably. A standard test dipole antenna 10 metres (32.83 feet) above ground no longer reflects what consumers are able, willing, or capable of doing with a single story home that has a roofline tip barely 16 feet (under 5 metres) above "average terrain". The difference between a 5 metre roof peak and a 10 metre test height is 5 metres - 16.4 feet of steel or aluminium mast rising above the roofline. In 1950, 1970, even 1980, no problem. In 2005 America, the majority of all housing developments prohibit "any antenna" that extends above the roofline; period.

DISH argues this is a very important 5 metres. They also argue that because most American television markets place TV transmitting antennas in many different physical locations, either the antenna must be rotated from station to station when viewing selection changes, or, multiple antennas must be installed. None of this fits the American lifestyle of 2005.

A 'channel surfing' system, designed to zip through all available channels at speeds approaching one new channel each second falls to bits when between channels the viewer must wait while the antenna rotor is engaged, the antenna rotates to the new antenna heading direction for the next channel, and then the receiver locks on. This is why, when all is said and done, why cable has grown so fast. Nobody waits for the antenna rotor to twist and turn when changing channels, on cable.

A separate study makes the case for retention of the 1950-based FCC technical rules in the following manner. Tests of available rooftop aerials found that, on average, consumer indoor antennas exhibit a loss of -1.1 dB across the VHF and UHF spectrum. In other words, less than a simple tuned-to-channel dipole. The losses were greatest at low-band VHF (USA channels 2-6 or 54 to 88 MHz); -4.4 dB. When the signal level from an "optimised" indoor antenna was compared to an optimised rooftop aerial at the magic 10

metre height, the rooftop antenna "won" by an average of 9.2 dB.

There are real-world practical numbers here. And there are more.

A UK study found that UHF channel signal level losses average 16.4 dB at ground level floors reducing to 4.2 dB at top floors. A USA study in Manhattan (New York) found losses were in the range of 25 dB for VHF channels and 21 dB for UHF, suggesting that if 1,000 microvolts (+60 dBuV) was the predicted signal level ten metres above ground, the actual level at VHF inside of a building at that location would be 25 dB lower - around 50 microvolts (way below quality reception thresholds) while at UHF it would be near 90 microvolts (still well below the 1,000 microvolt threshold).

ATSC is known to have a much tighter tolerance to multipath signals than the Australian-New Zealand (proposed) COFDM format. The Americans may well have chosen the 'wrong format' with ATSC but they will now have to live with it. Tests found that signal 'level' is not a cure-all; at 18% of all sites signal reflections (multi-path) even when the primary signal was above the threshold point did not work with an outdoor antenna; for indoor "obstructed" sites - those using indoor antennas but subject to measurable multipath - the percentage of sites unable to recover usable reception even when the signal levels were above threshold rose to 26.

So just how much signal is required for full-lock digital? DISH's consulting engineers used five current model (May 2005) STB/receivers and found the threshold point on average as -2.4 dB worse than the FCC's current 'standard'. Translation? The FCC has adopted a receiver threshold number which, so far, no consumer receiver has equalled.

DISH suggested in their filing that the 90% number be increased to 99% - i.e. all but 1% of homes within a specified signal contour should be able to receive an adequate signal level for full DVB-T signal lock. But how much signal is that? The answer remains elusive: DISH's engineers suggest a minimum of 17.5 dB above threshold to achieve 99% reliability for a signal in the 700 MHz region. Yes, the frequency of the transmission affects the threshold number, remarkably. So too do 'temporal variations' - defined as 'temporary variations' (reductions) in signal levels because of weather, temperature inversions or other disruptive effects. Measuring a 50 mile path at 700 MHz, a drop in signal level of more than 4 dB correlated with a rain storm (15.5mm rainfall per hour) passing across the transmission path.

#### How DISH (Ku-band direct) benefits

Under FCC rules, if DISH would be allowed to specify that a home within the Chicago coverage contour is in fact a Milwaukee viewing home, that residence could become a grateful subscriber to DISH. There are 212 'TV Market Areas' in the USA and because of terrain, distance, interference and other factors several million 'orphaned residences' which are, under present coverage rules denied access to the same signals they now receive via terrestrial analogue, via satellite digital. Echostar/DISH TV would benefit from a redress of the coverage rules, but terrestrial TV stations would not. By losing homes from their coverage area, into an adjacent "market", their income would decline (for the first time focusing advertising buyers on homes 'actually reached' versus homes 'claimed'). It is an interesting battle, now underway, and we'll have an update report.

It may be all over save for the moaning

## Subscription C-band in the USA shows every indication it is ready for burial

When C-band in the USA (and Canada) peaked as a paid subscription service, approximately 2,500,000 separate users were on line. That would be in the period around 1990. The C-band dish system had dropped to under \$1,000 US for FTA inclusive of a motorised actuator arm, and about double that if one was demanding access to subscription services (the difference being largely the premium costs attached to CA grade receivers).

Today, many refer to C-band as "The BUD System". BUD? "Big Ugly Dish". The comparison is with "SUD" or small - (ugly dish). The smallest C-band dish capable of providing CA service bottomed out after starting at the 5 metre level near 1.8m and the vast majority were 2.8 to 3.6m in size. SUDs, on the other hand, are under 100cm/1m and on average in the 70cm range.

From 2.5 million active subscribers the number has steadily dropped year by year, almost entirely due to two factors: (1) Repairing, maintaining a BUD with essentially no-longer-available replacement parts has become an exercise in frustration - and great expense. And, (2) the marketing of SUD has come down to one-two-three or even four complete IRDs, antenna, fancy LNBs, cabling at no charge in return for the viewer agreeing to go on contract for 12 to 36 months of month by month SUD service. Spending \$300 to replace a broken, rusted out, actuator motor drive or \$300 to have not one but four SUDs installed and to get a year's worth of 60+ channel service is a no brainer.

Still, there are those like our technology writer Tim Alderman (page 7, this issue) who will move away from their beloved C-band BUD only when faced with total loss of desired programming. For these folks there remain firms who act as "programming packagers" which function primarily as "cable operators - in the sky". They create

programming packages of as many channels as possible, at the a price which is competitive. Services such as Turner's TCM go to the program packager for around 25 US cents per month, and by the time the programmer adds up 50 or so such channels, it has \$15 or so in programming costs to factor into a sales package (some, such as HBO for example, are in the \$4 per month range). Then the program amalgamation firm, such as NPS mentioned in the letter below, have to create a subscription service complete with authorisation centre, elaborate connections to each of the programmers, and keep track of who and where each subscriber might be.

And of course these C-band packagers must compete with the monster-sized Ku-band direct services from DISH TV and DirecTV where packages can be as large as 500 channels (C-band packages seldom go much beyond 50 channels). Still, it serves a need, even if the market is declining rather than growing and is very unlikely to ever grow again. At some point the inevitable, as Tim Alderman reports in this issue, occurs; there are too few C-band capable systems still functional and between the competitors for that shrinking market, eventually each will fail leaving C-band without access to 'premium programming'. NPS as of mid-September had 99,061 "loyal subscribers" remaining on their books.

Of interest - while C-band dish systems are falling over (for lack of maintenance and a shortage of replacement/repair parts) at an increasing rate, the number of FTA C-band service channels has actually grown in the past five years - if one includes in that count the newly activated digital (FTA) services. What is missing here is a concerted effort to educate consumers that it is not a BUD versus SUD world but rather one that involves quality of reception. Alas, C-band is very unlikely to recover.

"Dear folks at NPS,

I am a long time subscriber to the C-Band and have enjoyed it thoroughly throughout the many years, and I am talking a lot here, since 1987. I have subscribed to many programmers over those years, but without a doubt, yours is by far the most dedicated to customer service of any I have subscribed to. Within the past 5 or so years I have been constantly bombarded by the other guys, and you know who I am talking about; Netlink, Superstar, and Turner and they have harassed me to no end to get a small dish and do away with my big dish. Some day I might do that, but, until the quality of the pictures matches or exceeds that of the big dish, I will never switch. Anyone with common sense that has ever seen the picture quality of the small dish versus the small one, will notice a remarkable difference right away. I cannot, for the life of me, understand why customers of the small dish will accept such substandard, horrid, TV reception from the small dish. Not only that, but every time we get a heavy, cloudy day, the reception is typically lost on a small dish. And this is in addition to the chronic and well known rain fading. If I were a customer using a small dish, I guarantee that the customer service department would hate me as I would complain on a daily basis about the inferior product, and would probably contact an attorney and bring suit for failure to receive what I paid for. So in my mind, now is not the time to go for a small dish system. I realise it has been difficult for you to retain access to many of the channels which small dish users

consider routine and your efforts to maintain the line-up is very much appreciated. It is likely that for every person like myself who appreciates what you have done to maintain a C-band service there are hundreds who do not appreciate what an effort is involved in keeping this functional. For those and myself, I thank you from the bottom of my big dish heart!" (Dale Ballou, Kansas City, Missouri)

### **Life left in C-band!**

In fact, for those 'stragglers' still married to a BUD, the 'numbers' suggest C-band is more than merely superior video quality. In the table, below, the primary movie service providers as delivered by C-band, SUD's DISH and DirecTV are compared. The totals tell the story: C-band offers 92 movie channels for a total annual cost of (US) \$678.95 while DISH offers 35 channels at \$743.40 and DirecTV offers 21 for \$720. That works out to (US) \$7.38 per channel per year for C-band, \$21.24 per channel DISH and

\$34.29 for DirecTV. C-band (with a motor drive) offers 21 satellites, several hundred FTA channels, and hundreds of 'wild card feeds' daily. SUD does not offer FTA nor wild card feeds. A home system equipped for both C and Ku FTA adds 11 new satellites, an additional 160 FTA service channels and more than 100 additional 'wild card feeds' daily. So why has C-band died? The answers are many, essentially coming down to lower (going in) costs, better marketing and a master plan by cable TV operators to kill off C-band (see 'VIDEO PIRATES', p. 32).

Example Services	C-band	DISH Network	DirecTV
HBO	18 channels/\$134.99 annual	9 channels/\$167.88 annual	7 channels/\$144 annual
Showtime	19 channels/\$119.99 annual	11 channels/\$143.88 annual	5 channels/\$144 annual
Starz	35 channels/\$183.99 annual	8 channels/\$143.88 annual	4 channels/\$144 annual
Cinemax	14 channels/\$119.99 annual	5 channels/\$143.88 annual	3 channels/\$144 annual
The Movie Channel	6 channels/\$119.99 annual	2 channels/\$143.88 annual	2 channels/\$144 annual

Again - ignore this at your own peril

## **First there were 'Indian Signs' NOW - there are Indian CHIEF Signs**

During the 1998 - 1999 period when Internet related public stocks went sky high in value (although most would subsequently dive to new lows leaving hundreds of billions of dollars wasted), Rupert Murdoch largely 'sat it out' making no major acquisitions in the Internet world. Since that period, broadband (high speed) Internet use has spiralled ever upwards with more than 50% of US homes now connected and other countries (such as the UK, Denmark) doing even better with high speed penetration.

That was 1998. Today, Murdoch's interest for Internet businesses has mushroomed, on the back of spending more than NZ\$12 billion for new corporate acquisitions since June.

Some see Murdoch's buying spree as validation that after a false start late in the 90s, Internet has finally arrived as a viable adjunct to the information flow technology. News Corp's sudden interest with Internet is no mystery when one studies the declining stock prices for all of the major 'traditional' media firms. Some examples:

Reference one year ago, Disney stock is off 14%, Time Warner (which owns CNN) down 8.5%, Viacom declined 15% and the corker of them all - News Corp has fallen 25%. That means based upon market share prices, Murdoch is now worth 3/4 of what he (and the firm) were one year ago. And Wall Street, which has always been luke-warm on media companies anyhow, has started to notice what is happening. And that includes major Internet firms, such as Google, currently being market valued at as much as 200% of one year ago. Nothing upsets a well organised business plan faster than a major negative reaction to a firm's share prices.

One individual with the credentials to be taken serious is Sir Martin Sorrell, chief executive of the WPP Group (UK). He is widely regarded as Britain's most influential advertising

man. And he is railing against what he terms "panic buying". Before a trade group (Engage 2005) he said:

"In the last three months (Murdoch) has decided to spend or try to spend UK\$5bn on internet properties of various sorts. Why is it that he is so preoccupied with this and willing it appears to make investments almost willy-nilly? I think I can use the word panic - that is possibly overdoing it, but maybe not."

Murdoch's spending spree began in July by purchasing US based Intermix which happens to own www.myspace.com, a two year old site allowing folks to share weblogs, photos, instant messages and music online. Think of myspace as a giant, world-wide, electronic notice board - such as you might find at the local shops only interactive in scope. The second buy was of Scout Media which has an on-line sports service - think horse racing and betting, always a safe business field if you know enough to be in the play. Third to fall into the news empire was IGN Entertainment, heavily into on-line video gaming (another hugely profitable but very vulnerable to competitive offerings field). Fourth to be swallowed was Easynet, acquired by News' BSkyB which fits a parallel announcement that BSkyB will begin offering 3G telephone users 'subscriptions' to sports and other services in 2006. The perception here is that Wall Street now firmly believes the media-scape is changing, rapidly, and unless a 'modern' public stock firm owns a piece of this action, their value will slide.

Sorrell observes, "I think (traditional media people) see circulation figures, TV viewing figures and revenue figures that give them deep cause for concern. The scale and speed of growth for the digital revolution is faster and bigger than any of us anticipated. The problem is that most of the established, old-line, media firms are run by 50-60 year olds who have

difficulty getting it right and really don't want major change 'on their watch'. Saying that the next generation, my kids and my grandkids, are going to have very different media consumption patterns is a bit of a cop-out. It is actually happening now."

Examples abound, of course. While on one hand traditional media firms such as The New York Times are experiencing revenue drops (earnings down 50% over just a year ago), garage-based on-line video streaming firms that began on a shoestring 12 months ago are racking up million-viewer hit numbers per day and collecting major advertising support from firms such as Coca-Cola.

### **BIG Time Illegal Power? 2.4 GHz**

It began as a simple project: 200/600mw S-band transmitters fed with surveillance camera video to allow remote monitoring of several sites within a few km. One day the reception 'crashed', intermittent flickering lines. No.

it was not the transmitters and not the receivers. A spectrum analyser revealed the interference was coming from a swept-frequency 2400-2480 MHz source (so-called

spread spectrum). Field work with a portable antenna tracked the signal source to a point 12km distant. Then the level of the interference jumped, big time, by 10 dB. A week later, another 20 dB. Working backwards, the radiated power appears to be in the region of 10-20 watts driving a 22 dB gain parabolic antenna. Because the transmitter sweeps the full unlicensed S-band frequency range, this makes any other use of S-band in the region impossible. The intended use of the system appears to be ISP but the hardware employed acts illegal. Familiar scenario?

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# SatFACTS Pacific/Asian MPEG-2 Digital Watch: 15 DEC, 2005

Bird	Service	RF/IF & Polarity	# Program Channels	FEC	Msym
Them3/78.5	SkyChAust	3695/1455H	up to 3	3/4	5(.000)
	ANT Greece	3672/1478H	1 TV	3/4	13(.333)
TARBS ME mux		3640/1510H	12TV, 12 radio	2/3	28(.066)
Ch Nepal		3626/1524V	1	3/4	15(.556)
Mahar mux		3600/1550H	11TV, 1 rad	3/4	26(.667)
RR Sat mux		3551/1600H	8TV, 10 radio	3/4	13(.333)
TVK Cambodia		3448/1702H	1TV	1/2	6(.312)
TARBS/Th5		3480/1670H	12 TV+radio	2/3	26(.667)
Thai Global		3425/1725V	up to 7?	2/3	27(.500)
InSat 2E/83	ETV mux	4005/1145V	6+ TV	3/4	27(.000)
Hyd Dig 2E		3910/1240V	1	3/4	5(.000)
Kairali TV		3699/1451V	1	3/4	3(.184)
Indian mux		3643/1507V	3	3/4	19(.531)
Sky Bangla		3430/1720V	1TV	3/4	6(.000)
NSS6/95E	Ant Pac (Greek)	11.104H-Australia	1 TV	3/4	2(.800)
As2/100.5E	Guangdong TV	4075/1075H	1TV + radio	3/4	6(.000)
Euro Bouqt		4000/1150H	5TV, 19 radio	3/4	28(.125)
SatLink		3960/1190H	3TV	3/4	27(.500)
Reuters News		3905/1245H	1TV	3/4	4(.000)
WorldNet		3880/1270H	4+/18radio	1/2	20(.400)
APTN Asia		3799/1351H	1	3/4	5(.632)
Reuters/Sing.		3775/1375H	1	3/4	5(.631)
APTN Asia#2		3705/1445H	1	5/6	4(.166)
Macau MUX		4148/1002V	5TV	3/4	11(.850)
Dubal MUX		4020/1430V	4+, radio	3/4	27(.500)
Trace TV		3792/1358V	1	3/4	2(.400)
BYU-TV		3767/1383V	1 + 20 audio	1/2	6(.530)
3-ch miniMUX		3752/1398V	up to 3	3/4	5(.640)
Saudi TV1		3660/1490V	7+/tests	3/4	27(.500)
As3S/105.5E	CETV digital	3680/1470H	1+ TV	3/4	26(.670)
Zee bouquet		3700/1450V	10TV	3/4	27(.500)
Cb News Asia		3706/1444H	1TV (+)	3/4	6(.000)
Azlo TV		3716/1434H	1TV (+)	3/4	7(.000)
BTV World		3725/1425V	1TV	3/4	4(.450)
TVB 8		3729/1421H	1TV	3/4	13(.650)
Zee Movies		3732/1418V	3TV	3/4	6(.500)
TV One		3739/1411V	1TV	3/4	2(.8934)
SAB TV		3743/2407V	1TV	3/4	3(.300)
Fashion TV		3747/1403V	1TV	3/4	2(.625)
AAJ-TV		3750/1400V	1TV	3/4	2(.820)
Arirang TV		3755/1395V	1	7/8	4(.418)
Now TV +		3760/1390H	up to 10TV	7/8	26(.000)
Star TV		3780/1370V	7(+)-TV	3/4	28(.100)
GXTV		3806/1344V	1TV + 3 radio	3/4	4(.420)
Shaanxi TV		3813/1337V	1TV + 2 radio	3/4	4(.420)
Anhui TV		3820/1330V	1TV + 2 radio	3/4	4(.420)
Jiangsu TV		3827/1330V	1TV + 2 radio	3/4	4(.420)
HL1TV		3834/1316V	1TV	3/4	4(.420)
Star TV		3840/1310H	7(+)-TV	7/8	26(.850)
Star TV		3860/1290V	5(+)-TV	3/4	27(.500)
Arabsat MUX		3880/1270H	10+TV, 14Radio	3/4	27(.500)
Dragon TV		3886/1264V	1 TV	3/4	4(.800)
Shaandong		3895/1255V	1TV + 6 radio	3/4	6(.813)
CCTV1		3904/1246V	1TV, 1 radio	7/8	4(.420)
Jilin TV		3914/1236V	1TV + 2 radio	3/4	4(.420)
Star TV		3920/1230H	4+ TV	7/8	26(.850)
CNNI		3960/1190H	8TV, 1 radio	3/4	27(.500)
StarTV		3980/1170V	6+TV	3/4	28(.100)
Star TV		4000/1150H	8(+)-TV	7/8	26(.850)
Sahara digital		4020/1130V	8TV, 1 radio	3/4	27(.250)
Hubei TV		4035/1115H	1TV + 2 radio	3/4	4(.420)
Tianjin TV		4046/1104V	1TV + 2 radio	3/4	5(.950)
Sichuan TV		4051/1099H	1TV + 1 radio	3/4	4(.420)
Qinghai TV		4067/1083H	1TV + 2 radio	3/4	4(.420)
Hunan TV		4082/1068H	1TV + 1 radio	3/4	4(.420)
Fashion/HK-Asia		4088/1062H	1TV	3/4	2(.626)
Pakistani TV		4091/1059V	4TV, 1 radio	3/4	13(.333)
Sun TV		4095/1055H	1	3/4	5(.554)
PTV National		4106/1044V	1TV, 1 radio	3/4	3(.333)
TVB8 Mux		4111/1040H	4 TV	3/4	13(.650)
Indus News		4115/1035V	1	3/4	3(.331)
CCTV bgt		4129/1021H	4 TV, 4 radio	3/4	13(.240)
Zee Bqt #2		4140/1010V	8(+)-TV	3/4	27(.500)
Henan TV		4166/984V	1TV + 8 radio	3/4	4(.420)
Fujian TV		4180/970V	1TV + 2 radio	3/4	4(.420)
Jiangxi TV		4187/963V	1TV + 2 radio	3/4	4(.420)
Liaoning TV		4194/956V	1TV + 2 radio	3/4	4(.420)
Cak1/107.5	Indovision	2,535, 2,565, 2,595, 2,625, 2,655	33(+)-TV	7/8	20(.000)
T Kom/108E	IndoBqt	3460/1690H	up to 6	3/4	28(.000)
C2M/113E	TPI	4185/965V	1	3/4	6(.700)
TVE Asia-Africa		4160/990H	1	3/4	5(.632)
Anteve		4144/1006V	1	3/4	6(.510)
Kabelvision Mux		4080/1070H	7+ TV	7/8	28(.125)
Indostar		4074/1076V	1	3/4	6(.500)
Satelindo		3935/1215H	1	3/4	6(.700)
Bali TV		3926/1224H	1	3/4	4(.208)
Indo MUX		3880/1270H	3+ TV	7/8	28(.121)
TVRI		3765/1385H	1TV	3/4	5(.555)

Receivers and Errata	
CA (#1, 3); FTA audio #2	
Late July 04: room for more (FTA)	
CA + 23FTA (AITV, IRB3, Vision Norge, Pakistan)	
New 03/03; FTA	
Thai + Indian services; FTA inc. Vibe TV, Sindh TV	
3TV, 5radio inc. Hellas TV Greece FTA	
<b>FTA</b>	
3FTA: TV5, VTV4, ATN Bangla	
FTA (reaches SE Australia)	
Several ETV now here; wide beam	
SCPC, OH E. Aust. wide beam	
SCPC, OK E. Aust wide beam	
corrections 12/02	
New - November 2002	
(still) FTA 11-04; was 11.083H	
July 04: FTA	
FTA TV + radio; closing down mid-Jan 2006	
<b>Real Madrid (V769, A770) English FTA</b>	
Was 3923H; sometimes FTA	
FTA; multiple audio services V2360, A2320	
Sometimes FTA; also 3895Vt	
<b>FTA &amp; CA</b>	
FTA and CA - NASA reports included	
5 chs TV, FTA, some tests	
FTA ; Dubai Sports Ch some English, soccer- new here Dec 2004; Euro-French music videos	
Increased coverage; great variety audio chs(03-05)	
Sun-TV, Surya TV, KTV (FTA)	
FTA MCPC; Yemen, MBC EUROsport tests	
replaces analogue same freq; V33, A32	
Now SECA 2 CA (10-04); Radio Aust. Eng. A2011	
English + V1160, A1120; 525, 625 versions	
Was parallel to 3640Hz analogue (now gone)	
 Conax CA, all Hindi films	
Also reported 3.333, 3/4 October 2005	
SAB may no longer here here; moved to NSS-6?	
new frequency October 2005	
New April 2005; English, urdu	
FTA SCPC; New PIDs V3601, A3606 June 2003	
<b>CA + FTA</b> ; Euro bouquet moving here (late 2005)	
NDS CA (Pace DV211, Zenith)	
Guangxi TV; was As2	
Was As2	
Was As2	
Was As2	
Was As2; HeiLong	
NDS CA (Pace DV211, Zenith)	
NDS CA (Pace DV211, Zenith)	
New April 2004: link to Optus B3 Globecast	
Shanghai	
Apparently Mongolia	
 Star Sports Asia (+), FTA NTSC; V514, A670 (10-04)	
PowVu CA; new SR Apr 29; CNN radio FTA	
NDS CA; Star News India FTA VPID 514, APID 648	
NDS CA w/ 4(Chinese) FTA	
New Sr September 2004	
Was As2	
new December 2004	
Was As2	
Was As2	
Was As2	
New July 2005	
new Sr, channels, Nov 2003	
"History Channel" - SCPC, some English	
 MATV Ch Movies now Irdet 1	
Hindi (+ "Plus"); day parts	
moved from 4115	
Now SECA 2 CA (10-04); 1 occ. FTA (varies)	
Was As2	
NDS CA using RCA/Thomson, Pace IRDs; <b>2,535 has 2 FTA</b>	
also 3586H/17.500, 3496H/19.615	
FTA SCPC; NT/NC only	
New August 2003	
change from 4055V; FTA SCPC	
also try 3500H, 27.000, 3/4, strong NZ	
<b>FTA</b> (new 06-03); V2201, A2202	
test card - only - reported	
FTA, may not be active full time	
FTA; Sr change 01/03; erratic	
bounces btwn FTA and CA; unreliable (12-04)	

Bird	Service	RF/IF & Polarity	# Program Channels	FEC	Msym
	<b>Brunei/Sing</b>	3733/1417H	1TV	3/4	6(000)
	<b>SCTV</b>	3726/1242V	1TV	3/4	6(620)
	<b>RCTI</b>	3473/1677H	2	3/4	8(000)
As4/122E	CCTV internal	4100/1050V	6	3/4	27(.500)
Jc3/128	Miracle Net	3996/1154V	3 up to 6	5/6	22(000)
	Asian bqt	3960/1190V	up to 8	7/8	30(000)
Ap6/134E	Multiple	4140/1010V	up to 8	7/8	27(.500)
T18/138	<b>Tests</b>	3460/1690V	8	3/4	30(000)
	<b>LTV Laos</b>	3804/1346V	1		
Am3/140	<b>STS +</b>	3731/1419R	1	3/4	3(200)
Jc2A 154	<b>BYU-IV</b>	3915/1245V	1+ 20 languages	3/4	4(166) (?)
MeasSs2	<b>Astro Mux</b>	11.602H	up to 17TV	3/4	41(.500)
	<b>VTV MUX</b>	11.522V	3 TV	3/4	9(766)
B3/152	AuroraBiz	12.407V	4 TV, 10 radio	2/3	30(000)
	<b>UBI/Tests</b>	12.425V	up to 13 TV + radio	3/4	22(.500)
	<b>Globecast 2</b>	12.525V	13 TV, 8 radio	2/3	30(000)
	<b>Globecast (feeds)</b>	12.550-.555V	1TV	3/4 & 2/3	6(.110/.670)
	<b>Globecast</b>	12.564V/T13	2+ TV	2/3	30(000)
	<b>UBI/Tests</b>	12.613H/T14L	11+TV	3/4	22(.500)
	<b>UBI/Tests</b>	12.640H/T14U	11+TV	3/4	22(.500)
	<b>Globecast 1</b>	12.658V/T7	14TV, 15 radio	2/3	30(000)
	<b>UBI/Tests</b>	12.674H/T15L	11+TV	3/4	22(.500)
	<b>UBI/Tests</b>	12.701H/T15U	11+TV	3/4	22(.500)
	<b>WA ABC</b>	12.702V	1 TV, 1 radio	7/8	14(.288)
	<b>WA SBS</b>	12.720V	4TV, 2 radio	5/6	12(.600)
	<b>WA GWN/WIN</b>	12.738V	2TV	7/8	14(.295)
CV/156E	Internet tests	12.288V/T1L	no regular TV	1/2 -?	28(.650) (?)
	Aurora	12.324V/T1U			
	Pay TV	12.365V/T2	11TV, 2 radio	3/4	27(.800)
	Aurora Home	12.407V/T3	5 TV, 13 radio	2/3	30(000)
	Pay-TV	12.447V/T4	STV, 4 data	3/4	27(.800)
	Pay TV	12.487V/T5	3+ TV, data	3/4	27(.800)
	Aurora 2	12.527V/T6	7TV, 20 radio	3/4	30(000)
	Pay-TV	12.567V/T7	10 TV	3/4	27(.800)
	Pay-TV	12.607V/T8	10 TV	3/4	27(.800)
	Pay-TV	12.647V/T9	10 TV	3/4	27(.800)
	Pay-TV	12.692V/T10L	6TV, 27 radio	1/2	28(.650)
	Aurora MUX	12.728V/T10U	4TV, 17 radio	1/2	24(.450)
	Austar	12.305H/T11	6TV, 24 data	3/4	30(000)
	Pay-TV	12.358H/T12	10 TV	3/4	27(.800)
	Pay-TV	12.398H/T13	10 TV	3/4	27(.800)
	Pay-TV	12.438H/T14	6TV, 3 data	3/4	27(.800)
	Pay-TV	12.478H/T15	10 TV	3/4	27(.800)
	Pay-TV	12.518H/T16	10 TV	3/4	27(.800)
	Pay-TV	12.558H/T17	10 TV	3/4	27(.800)
	Pay-TV	12.598H/T18	10 TV	3/4	27(.800)
	Pay-TV	12.638H/T19	10TV, 30 radio	3/4	27(.800)
	Pay-TV	12.688H/T20	11TV	3/4	27(.800)
BI/160	7 Central DTV	12.365H	1TV	3/4	5(100)
	Occ. feeds	12.380H	1 TV - *	3/4	6(.111)
	Occ. feeds	12.384V	1 TV - *	3/4	6(.111)
	<b>Net 7 service</b>	12.397H	1	3/4	7(.200)
	<b>Imparja mx</b>	12.379H	2TV + 8 radio	3/4	5(.424)
	<b>7 digital feeds</b>	12.397H	1TV	3/4	7(.200)
	<b>Feeds to NZ</b>	12.411V	1 TV	3/4	6(.111)
	<b>SBS Mux</b>	12.420H	3+ TV, 2+ radio	5/6	12(.600)
	<b>TVNZ DTH</b>	12.456V	5+TV	3/4	22(.500)
	<b>TVNZ Tests</b>	12.483V	up to 11TV	3/4	22(.500)
	Sky NZ	12.519/546V	7TV/7TV	3/4	22(.500)
	Sky NZ	12.581/608V	6TV/6TV	3/4	22(.500)
	Sky NZ	12.644/671V	9TV	3/4	22(.500)
	<b>ABC HDTV</b>	12.610H	STV	7/8	14(.3288)
	Sky NZ	12.707/734V	8+TV	3/4	22(.500)
P8/166E	ABS-CBN	12.575H	4+TV, 4+ radio	2/3	13(.845)
	JEDU/TVB	12.686H	11+ TV	3/4	28(.126)
	<b>ABC A-P</b>	4180/970H	2TV, 2 radio	3/4	27(.500)
	Disney Pac	4140/1010H	typ 6 TV	5/6	28(.125)
	Taiwanese MUX	4080/1070H	12+ TV	5/6	30(000)
	NHK Joho	4060/1090H	7TV, 1 radio	3/4	26(.470)
	FOX Mux	4040/1110V	up to 5TV	7/8	26(.470)
	<b>NET +</b>	4121/1029V	1 TV	3/4	4(.774)
	ESPN USA	4020/1130H	8+TV, data	3/4	26(.470)
	Discovery	3980/1170H	8 typ.	3/4	27(.690)
	<b>CalBqt/Pas8</b>	3940/1210H	up to 3+ FTA	7/8	27(.690)
	CNBC HK	3900/1250H	up to 7TV	3/4	27(.500)
	FilipinoMUX	3880/1270V	up to 8TV+radio	5/6	28(.694)
	<b>TaiwanBqt</b>	3860/1290H	12TV + 30 r	5/6	28(.000)
	<b>CCTV Mux</b>	3829/1321H	up to 4+ 1 radio	3/4	13(.240)
	TVBS-N	3836/1314V	<b>1FTA</b> , 4+ CA	3/4	22(.000)
	EMTV PNG	3808/1342V	1 + 2 radio	3/4	5(.632)
	CNNI	3780/1370H	3, up to 5 TV	3/4	25(000)
	Discovery Asia	3764/1386V	Up to 6 TV	3/4	19(.850)
	MTV	3740/1410H	8	2/3	27(.500)
P2/169E	WA Mux Pv	12.281V	3+ TV, radio	2/3	27(.500)
	<b>Ariang TV</b>	12.401V	1TV	3/4	4(.400)
	ABS-CBN	12.575H	4TV, 2 radio	1/2	13(.845)
	Test mux	12.715H	6+ TV	2/3	30(000)
	TARBS feeds	4090V/1060V	9TV+ radio	3/4	21(000)
	<b>BBC SCPC</b>	3986/1164H	1TV	1/2	5(.700)

### Receivers and Errata

FTA ; Singapore 23hrs, Brunei 1 hr; Brunei V1200 was on 4048V; New Caledonia, parts of Australia FTA SCPC; Australia, New Caledonia, some Eng. Irdeto 2; 4060V HDTV CA; also try 4020V PowerVu; some FTA (Ch. 1 & 3) CA & FTA NTSC: Japan, Taiwan (ApStar 6; also 4180V same #s, analogue also) also try 3660/3540VVt, Sr 30.000, 3/4; some FTA VPID 512, APID 4112 North beam; also try 3875R, 12.475, 1/2 Strong NZ & Australia; may now be 1/2, 6.525 Aust East beam - **3 FTA + 14 CA** WA only? Skew path, intended Asia differs from 12.407 C1; **tune ch FTA; NZ+Au** T11/lower testing late May 2005 NZ + Au FTA Mrypt CA occ feeds, NZ + Au; recently 12.553V AMTV, Healing only FTA svcs now here High performance beam; not NZ, new PIDS 10-05 High performance beam; not NZ, new PIDS 10-05 NZ + Au (Mrypt, PowVu capable) High performance beam; not NZ, new PIDS 10-05 High performance beam; not NZ, new PIDS 10-05 ABC WA tests, FTA SBS, radio tests WA FTA Irdeto V2 CA, tests (GWN, WIN) Now on Australia + NZ beam; SCPCs not currently in use Tests; SBS-NDS CA, others FTA when here NZ (90cm) + Australia (**Only C1 svc left on NZ**) Australia NA only (leakage to Norfolk, New Cal) Australia NA only (leakage); 9-Net x 3 widescreen Arrow radio (still here), tone FTA Pay-per-view movies; CA Pay-per-view movies; CA Pay-per-view movies; CA ABC for Foxtel/Austar, previously 12.288V changes September 2005 Austar inter, **Expo FTA** NDS CA + Mrypt, CA CA, subscriptions available Australia, Norfolk Sky News active; 'Help x 2' **FTA** CA, subscriptions avail Au, Nrlfk, **TVSN FTA** CA, subscriptions available Australia, Norfolk "Home" CA, subscription available Australia, Nrlfk CA, subscriptions available Australia, Norfolk CA, subscription available Australia, Norfolk CA, subscription available Australia, Norfolk Central beam; Freq change 08-05 \* - plus 12.451H, 12.460H \* - plus 12.293V, 12.402V, 12.411V Full schedule less commercials - links; may be CA PIDS vary; also try 12.360, 12.370 occ. digital feeds; typ fta Often NTSC; USA-Australia-NZ **Also 12.437H, 12.456H** same params; HDTV+WS FTA 7 channels (TVNZ x 4), +Maori, DW, CCTV9 Testing late June; 16.9 added late July NDS CA, subscription available NZ NDS CA, subscription available NZ NDS CA, subscription available NZ also see 12.626, 643, 670, 688, & .706H NDS CA, subscriptions available NZ CA June 2002-Irdeto-2 CA Dateline west; also east PAS2, 3901V PowVu CA Tests - CA service announced PowVu CA & FTA; subscription available was PAS-2, previously 3992Vt, **feeds FTA** NET25 + FTA; new PIDS April '03; reload PowVu CA; ch 11 DCP-CCP bootload; audio **FTA** PowVu/CA (some audio **FTA**) PowVu CA & FTA (EWTN + CBS +TBN +) NDS CA (6 channels), one test card occ FTA **Myx FTA** V196A, A1920 + radio FTA Mixed FTA & CA; STC gone (CA) PowVu FTA, replaces PAS-2 svc Difficult because of CCTV cross pole PowVu CA PowerVu; some audio **FTA** PowerVu; Asian MUX; new parameters Nov '03 # 8 **MTV China FTA V289, A290**; rest CA PowVu CA, WIN, ABC NT, SBS; status unknown Test - may not stay permanently Temp FTA; subs Aust 011-800-2270-0722 initially with 6 NTSC colour bars Occ FTA (Chile +); BIG power reduction Nov 03 BBC World moved here January 2005

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[www.satlinknz.co.nz](http://www.satlinknz.co.nz) - Peter - 0274937025



**wavelength**



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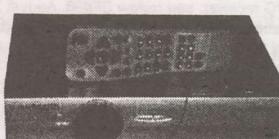
**DSR-192**

Compact Digital **Satellite** receiver with Scarts, SPDIF Optical out, Modulator, Diseqc1.2 and loop through connection.

Phone: (07) 47287704 Fax: (07) 47287759  
eMail: [philip@kristal.com.au](mailto:philip@kristal.com.au)  
Web: <http://www.kristal.com.au>

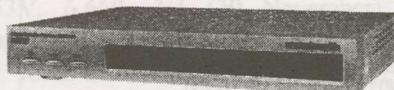
**wavelength**

**DSR-807**



Compact Digital **Satellite** receiver with UCAS slot, Scarts, SPDIF Optical out, Modulator, Diseqc1.2 and loop through connection

**wavelength DSR-103**



FTA Compact Digital **Satellite** Receiver With Modulator & SPDIF Coaxial output Diseqc1.2 and loop through connection.

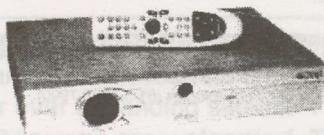
**wavelength**

**DTR-279**



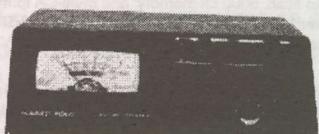
FTA Compact Digital **Terrestrial** Receiver SD Standard Definition Digital Terrestrial Receiver with Philips tuner, modulator, Wide Hot Key, Teletext & Logical Channel

**OPENTEL ODS4000IR**



Digital **Satellite** Receiver with one embedded Irdeto Smart card slot With Modulator & SPDIF Coaxial output, Diseqc1.2 and loop through connection.

**Marco Polo basic Satellite finder**



Satellite finder with inbuilt rechargeable battery, Signal level meter, tone, 13/18V output and 22KHz output.

Bird	Service	RF/IF & Polarity	# Program Channels	FEC	Msym
(PAS2/169E)	<b>Adventists.tv</b>	4040/1010H	1	2/3	5(.900)
	<b>Feeds</b>	3868/1182H	1	2/3	6(.620)
	<b>Feeds</b>	3939/1211H	2 (typ NTSC)	2/3	6(.620)/7(.498)
Cal PowVu		3901/1249H	up to 8	3/4	30(.800)
HK bouquet		3850/1300H	up to 8	2/3	24(.900)
<b>Korean Bqt</b>		3771/1379H	1	3/4	6(.510)
<b>1804/174E</b>	<b>IPSTAR</b>	12.619H	1	2/3	25(.220)
	<b>Tests-NZ beam</b>	12.646H	1	3/4	22(.418)
	<b>RFO Poly</b>	4027/1123R	1TV	3/4	4(.566)
<b>1701/180E</b>	<b>TNTV</b>	11.060&11.514V	9	3/4	30(.000)
	<b>TVRFO</b>	11.136V, 11.174V	6+TV, 3+ radio	3/4	23(.149)
Canal+Sat		11.610H	16TV, 1 radio	3/4	30(.000)
PBS		12.648HH	16TV possible	3/4	28(.066)
TVNZ/BBC		4186/964RHC	1	3/4	5(.632)
TVNZ		4178/972RHC	1	3/4	5(.632)
AFRTS DTS		4175/975L	3 TV, 3 radio	2/3	3(.680)
TVNZ/Aptn		4170/980RHC	1	3/4	5(.632)
Fiji Sky Pacific		4095/1055LHC	6TV + future radio	3/4	16(.505)
Fiji Sky Pacific		4055/1095LHC	6TV + future radio	3/4	16(.505)
TVNZ/feeds		4052/1098RHC	1	3/4	5(.632)
<b>TVNZ feeds</b>		4044/1106R	1	3/4	5(.632)
NZ Prime TV		4024/1126L	1	2/3	6(.876)
NBC to 7 Oz		3960/1190R	1	7/8	6(.447)
<b>TBN Mux</b>		3927/1223R	3TV	2/3	9(.100)
WorldNet		3886/1264R	1TV, 37 radio	3/4	25(.000)
<b>Ioarana</b>		3772/1378L	1	3/4	4(.566)
<b>NASA TV</b>		3854/1296R	1 TV	3/4	2(.000)
TVNZ		3846/1304R	1	3/4	5(.632)
<b>NBA (Barker) Ch</b>		3803/1347R	1	3/4	6(.111)
USA feeds		3749/1401R	4?	?	26(.400)
<b>NSS-5/177W</b>	Pacific IP Data	3763/1387R	none-data	3/4	27.5
	<b>BYU-TV</b>	4185/965R	1TV, 20+ audio	1/2	6(.525)
	<b>iPSTAR Tests</b>	12.691V	8 TV	5/6	17(.600)
	<b>Russian TV tests</b>	12.744V	2 TV	3/4	3(.977)

### Receivers and Errata

New December 2003; 24/7 "Hope Chs."
FTA (occ sport); also try 3863, Sr6.100
FTA-typ NTSC-occ sport, live Shuttle
PowVu CA + <b>FTA</b> (includes BBC-W 05-05)
was 41.48Vt; some <b>FTA</b>
Korean MUX, reload 12-04; new Sr
Tests, late May start, also 12.646H
Testing possible data links; June 2003
SE spot beam; was 4027LHC
east spot; 10TV + r each, vertical pol.
<b>FTA</b> 11.136 Tahitian beam, 11.174 west beam; 12-04
1+ <b>FTA</b> , MediaGd "2"; + 10.975 weaker
Testing Fiji region pay-TV (MDS) package (Oct '04)
DMV/NTL early vers., occ feeds, typ ca
DMV/NTL early vers., occ feeds, typ ca
DTS Direct to Sailors; audio previously FTA - gone
DMV/NTL early vers., occ feeds, typically ca
Nagravision CA (> Feb 1, 2005) New PIDS
All now (including Fiji 1) CA; 7 Feb, 2005)
DMV/NTL early vers., occ feeds, typ ca
SCPC, mixed CA and <b>FTA</b> feeds
PowVu CA; Auckland net feeds
CA, Leitch encoded
Church Ch (1560), TBN (1760), JCTV (1860) W hemi
New PIDS Dec 03 very strong NZ, Pacific
FTA SCPC; East Hemi Beam-Tahiti
24/7 live NASA - West Hemi bm (can be difficult)
SCPC, mixed CA and <b>FTA</b> , feeds
NBA feeds - probably CA - new Nov 2003
16-QAM (not MPEG-2 compatible)
Data only but useful for dish alignment
Global beam - requires sizeable dish
CA Tests - Taiwan TV; data coming? (NZ beam)
Tests - may not last (May 2005), NZ bm; PKVS, REN

### MPEG-2 DVB Receivers: (Data here believed accurate; we assume no responsibility for correctness!)

AV-COMM R3100. FTA, excellent sensitivity (review SF May 1998); new version Sept. '99. AV-COMM P/L, 61-2-9939-4377.

AV-COMM Tiny Tot. FTA, 12Vdc operated, palm sized, low power consumption; review SF#120. Contact # above.

Coship 3188C. Review SF#107. Blind search FTA rcvr; works well. Phoenix Technology Group ([www.phoenixsatellite.com.au](http://www.phoenixsatellite.com.au)) (Irdeto 2 as well as FTA versions)

Divitone: "Left-handed" review SF#115; does "code key" entry. Available <http://www.satmax.ws>

eMTech eM-100B (FTA), eM-200B (FTA + Clx2), eM210B (FTA + 2xCl + positioner); KanSat 61-7-5484 6246 (review SF#89)

Fortec Star Lifetime. Two versions, both blind search, code-key programmable, one X 2 Cl. Review SF#119. [www.aDigitalLife.com](http://www.aDigitalLife.com)

Humax ICRI 5400 (Z). Embedded Irdeto + 2 CAM slots; initial units had NTSC glitch, now fixed. Widely available; new software avail 04-04, SF#76.

Humax IRCI 5410 (Z). Adaptable version capable of holding multi-CA systems (SF#98, 99). Widely available; original importer Sciteq ([www.sciteq.com.au](http://www.sciteq.com.au)).

Hyundai-TV/COM. HSS100B/G (Pacific), HSS-100C (China) FTA. Different software versions; 2.26/2.27 good performers, 3.11 and those with Nokia tuners also good; later 5.0 not good.

Hyundai HSS700. FTA, PowerVu, SCPC/MCPC. Review SF March 1999. Kristal Electronics, 61-7-4788-8902.

Hyundai HSS800CI. FTA, Irdeto (with CAM) + other CA systems, PowerVu, NTSC. Kristal Electronics, above, review SF#63.

INNOVIA IDS3088. Review SF#111. Blind search FTA receiver. High quality IRD; available Phoenix Technology Group, and Satmax (<http://www.satmax.ws>)

ID Digital CI-24 Sensor. New August 2003; new lower noise tuner, extra sensitivity; CI Interface slot Irdeto 1 & 2; review SF#109. Sciteq 61-8-9409-6677.

KSF-570 FTA digital receiver, import; KSC-570 adds Cl x 2 (no test or user results available). Asoft Limited, 64-4-234-1096

KSC-N550H2 'Premium Dual DVR' digital receiver (no test or user results available). Asoft Limited, 64 4 234 1096

MediaStar D7.5. New (May 00) single chip FTA; review June 00 SF. MediaStar Comm. Int. 61-2-9618-5777

MediaStar D10. FTA and Irdeto embedded CA. VG receiver; see review SF#96, August 2002. Contacts immediately above.

MultiChoice (UEC) 660. Essentially same as Australian 660, not grey market contrary to reports. Sciteq tel 61-8-9306-3738

Nokia "d-box" (V1.7X). European, FTA, may only be German language, capable of Dr. Overflow software. SF#95, p. 14.

Nokia 9200/9500. When equipped with proper software, does Aurora, originally did pay-TV services provided software has been "patched" with "Sandra" or similar program. See SF#95, p. 14, SF#96 p. 15. SatWorld 61-3-9773-9270 ([www.satworld.com.au](http://www.satworld.com.au))

Pace DGT400/DVR500. Originally Galaxy (Now Foxtel+Austar). Irdeto, some FTA with difficulty (Foxtel Australia 1300-360818), UECs replaced.

Pace "Worldbox" (DSR-620 in NZ). Non-DVB compliant NDS CA including Sky NZ, no FTA; similar "Zenith" version (see SF#115, p. 15).

Phoenix 111, 222, 333 models (no longer produced): Service, backup - Phoenix Technology Group 61 3 9553 3399; [www.phoenixsatellite.com.au](http://www.phoenixsatellite.com.au)

Pioneer TS4. Mediaguard CA (no FTA); embedded Msym, FEC, only for Canal+Satellite (AntenneCal ++687-43.81.56)

PowerVu (D9223, 9225, 9234). Non-DVB compliant MPEG-2 unless loaded with software through ESPN Boot Loader (see below). Primarily sold for proprietary CA (NHK, CMT etc). For service only - call Scientific Atlanta 61-2-9452-3388. For revision model D9850, see Scientific Atlanta (below).

PowTek. Blind Search Chinese sourced, field tests rate it highly. Source [jason@adigitalife.com](mailto:jason@adigitalife.com)

Prosat 2102S. STA SCPC/MCPC, NTSC/PAL, SCART + RCA. Sciteq 61-8-9306-3738

SatCruiser DSR-101. FTA SCPC/MCPC, PowVu, NTSC/PAL. (Skyvision Australia 61-3-9888-7491, Telsat 64-6-356-2749); no longer available.

SatCruiser DSR-201P. FTA SCPC/MCPC, PowVu, NTSC/PAL, analogue, positioner - (Skyvision - see above); no longer available.

SATWORK ST3618. Blind search FTA receiver. Fast search, problems, especially in "memory-filing" system; review SF#111. Available DMSi at [tim@dmsi.com.au](mailto:tim@dmsi.com.au)

SATWORK ST3688. Blind search, 3000+ ch memory, multi-format RF modulator; improved version 3618. Review SF#113; available DMSi (above)

Scientific Atlanta D9223, D9234, D9225; Orig. PowerVu, superceded Dec 2003 by D9850. Commercial receiver, available TVO 61-2-9281-4481, John Martin

Strong Technologies SRT2620. SCPC, MCPC FTA, exc sensitivity, ease use, programming. Review SF#91 (ph. below)

Strong SRT 4600. SCPC, MCPC, PowerVu; exc graphics, ease of use, review SF#64. Strong Technologies 61-3-8795-7990.

Strong 4800. SCPC, MCPC, embedded Irdeto+ CAM slots, does code key with additional software. Aurora. Strong Technologies 61-3-8795-7990.

Strong 4800 II. SCPC, MCPC CAM slots x 2 for Aurora +, Zee, Canal +, code key with additional software. Strong Technologies (above); review SF#103.

Strong 4890. SCPC, MCPC, 30Gb PVR, 2 CAM slots, DiSEqC 1.0, 1.2 (review SF#84), does code key with additional software; Strong Technologies, # above.

UEC Atlas/Titan (1000). New July 2003, replacing DGT400 for Austar. No SCART, L-band loop; also available Rural Electronics 61-2-6361 3636.

UEC642. Designed for Aurora (Irdeto), approved by Optus; w/new software, C-band FTA, faulty P/S. Norsat 61-8-9451-8300.

UEC660. Upgraded UEC642, used by Sky Racing Aust., Foxtel, limited FTA. (Nationwide - 61-7-3252-2947); P/S problems.

UEC700720. Single chip Irdeto built-in design for Foxtel; unfriendly for FTA. Power supply problems, seldom sold to consumers; propensity to fall off back of trucks.

Voyager. Two models (08-05); one FTA auto scan, 6000 ch memory, one multi-CA format CAM. [satlinknz.co.nz](http://www.satlinknz.co.nz)

Winersat DigiBox 200. C + Ku basic receiver but includes Teletext for NZ TVOne, 2 VBI. Satlink NZ, fax 64-9-814-9447; long term teletext problems (loses TT).

"X" Digital. When modified with "aftermarket" Internet software, does Aurora and other V-1 CA without card; review SF#119. Strong Technologies (61-3-8795-7990).

**Accessories:**

Aurora smart cards. MCRYPT (Irdeto V2) cards now available (Jan 2005), Sciteq 61-8-9409-6677.

PowerVu Software Upgrade: PAS-8, 4020/1130Hz, Sr 26.470, 3/4; pgm ch 11 and follow instructions (do not leave early!)

PowerVu (Pacific) repair service: Cable & Sat Svcs, Darius West, 61-2-9792-1421 (Email [darius@cases.net.au](mailto:darius@cases.net.au))

# WITH THE OBSERVERS

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**Launches:** Major disappointment - AMC23, scheduled to launch from Baikonur Cosmodrome (Kazakhstan) December 6th, has been "put off indefinitely" because of an anomaly with upper stage flight control unit. The C + Ku bird, designed to link western USA with all of the Pacific, west to Viet Nam, will position at 172E. One early announced user will be Air New Zealand planning to offer trans-pacific fliers access to Internet from their seats (\$9.95 per hour, \$29.95 full flight). When it does fly, bird will appear just to right (for southern hemisphere viewers) of PAS-2 (169E).

**AsiaSat 2/100.5E:** "FTA sports feed. 3825V, 6.610, 3/4." (B. Richards. SA)

**AsiaSat 3/105E:** Reminder: DW (including radio) has now begun on 3760H, 26.000, 7/8 and previous service on As2 4000 will close down midnight 15 January.

AsiaSat 4/120E:

**Express 6A/103E:** Sandwiched in between AsiaSat 2 and 3(R) is new Russian satellite Express 6A. There will be/are problems here, especially in eastern Australia and New Zealand, when 6A becomes loaded up.

**iPstar/120E:** "Test signals L-band 1180 MHz Vertical" (C. Sutton. NZ).

**Optus B3/152E:** "On 5 December UBI disabled inversion of T14/12.613H (22.500, 3.4). On 12.640H, RDPR at APID 662 is now FTA (was CA). Of interest, UBI may have all 5 transponders (finally) running at about the same signal levels but the SQ (quality) varies widely on Satworks ST3688: T11/Lower 12.425H Sq 89%; T14/Lower 12.613H Sq 64%; T14/Upper 12.12.640H Sq 64%; T15/Lower 12.674H Sq 73%; and, T15/Upper 12.701H Sq 89%.." (IF, Qld) "12.465H, 6.110, 3/4 November 27 feed labelled 'Service 1' (V308, A256) suddenly turned off data stream, returned with it inverted and adding second audio at (A)257. This was FTA, from Albany Racing Club (WA) to Sky Australia; this sort of modulation polarity is most unusual!" (IF, Qld) "I Am A Celebrity - Get me out of here!" labelled 'IAC Path 2' on 12.553V, 6.669, 3/4 (20 November), NTL CA; widely varying signal levels." (Grady) "Optus has been running SCPC feeds on 12.273V, 12.291V, 12.299V and 12.307V; all Sr 6.666, 3/4. Most common user is Globecast/TVN and 'A-League Football'. On 1 December, live feed of 'Walkey Award' (journalism) 12.273V, 6.669, 3/4." (IF, Qld) "Daystar (USA religion) moved from T5 to T7/12.567V (30.000, 2.3), FTA, replacing RTR (Russian CA). Globecast has also added

'GCA Adhoc' to T13/12.563H (V2460, A2420), Mcrypt CA. Video data rate initially 6 Mbps, now 8.5. USA formatted Assyria Sat. 12.525V, has shut down replaced with Russian CA ORT1. Two Korean channels this transponder relabelled TVK1 and TVK2 (was MBC). New radio channels: T5/12.525V, Radio '2CR' (A2014) is Mandarin. On T13/12.563H, 'ME Radio' (A2022) apparently Arabic; both FTA. UBI has managed to 'cram' a 13th channel onto T14L/12.613H (22.500, 3/4) labelled 'CH 68'. This is in fact UBI's 61st channel but who said they could count! (Editor's note: The mistake in counting is because the UBI tech has left some old now unused TARBS settings from T11/lower - but he will correct it when he reads it here!) I am guessing that squeezing 13 video channels into the same transponder will make UBI's Turkish viewers unhappy with their picture quality - 'UBI - the home of unnecessary pixellation!'" (IF, Qld.) UBI has launched two new (currently FTA) Greek channels: 'MEGA' on 12.564H/T15/lower, and, 'STAR' on 'Ch 63' (12.425H/T11Lower. And a new FTA radio channel is on T14/Lower 12.613G ('RAUS')." (NS, Vic.)

**Optus C1/156E:** "Disney Playhouse is now running 12.438H (27.500, 3/4) CA". (IF, Qld) (Editor's note: Also newly available in SKY NZ bouquet) "Radio 2, 12.527V (30.000, 3/4) on SMA Bus 6 and Bus 7 are promoting their availability on AsiaStar". (AI, NSW) "T13/12.398H (27.800, 3/4) previously carrying Foxtel Footy Channel (FFC) relabelled 'FS Com Gazmes', likely to be Melbourne Commonwealth Games(March). An 11th TV channel has also been added to 12.398H, 'FS Gold', currently a still graphic slide promoting Melbourne Games. T17/12.558H (27.800, 3.4) has also added 11th TV channel; 'Disney' Playhouse Channel' has also appeared on 12.438H, previously labelled 'Spare'. (Arnold)

**Palapa C2/ 113E:** "Suggest you check 4080H 28.125, V514, A652, PCR 8190 plus V5125, A653, PCR 8190." (Steve Johnson, NZ)

**Soapbox:** "The AMC23 service to Air New Zealand (and others) involves a 1 metre range fuselage mounted antenna (for Air NZ's 747, 777 planes), allows up to 20 Mbps down and 5 Mbps up which within the plane will be distributed using either an Ethernet LAN (local area network) or 802.11 WiFi access (2.4 GHz or some other frequency radiated within the plane). Users with laptops will either plug in to an Ethernet socket at the seat, or simply tell their laptop to

**WITH THE OBSERVERS:** Reports of new programmers, changes in established programming sources are encouraged from readers throughout the Pacific and Asian regions. Information shared here is an important tool in our ever expanding satellite TV universe. **Photos of yourself, your equipment or off-air photos taken from your TV screen are welcomed.** TV screen photos: If PAL or SECAM, set camera to f3.5-f5 at 1/15th second with

ASA 100 film; for NTSC, change shutter speed to 1/30th. Use no flash, set camera on tripod or hold steady.

Alternately submit any VHS speed, format reception directly to SatFACTS and we will photograph for you. Deadline for January 15th issue: January 4th by mail or 5PM NZST January 5th if by fax to 64-9-406-1083 or

Email [skyking@clear.net.nz](mailto:skyking@clear.net.nz).

### The Australia-New Zealand B + C to D Transition

All things that fly and spew from Clarke orbit have a limited lifetime; Australia's satellites not being an exception. Major upgrades are scheduled in the coming 12 to 24 months, subject to the usual caveats that a bird in Clarke orbit is worth several on the ground (to be useful, they must fly and function properly).

B1, launched in August 1992, is scheduled to run out of steam by mid-2006. There is a caution here: B1 has exhibited control problems (mid 2005) and could with no warning simply quit - before replacement D1 is ready to take over service. D1's actual launch date is uncertain; a contract with European Arianespace has a backup provision with the Sea Launch service. Ariane is in the process of upgrading their launch vehicles and some delays have been noted to date; more are likely. Getting D1 to 160E, to replace B1, not later than August 2006, is crucial and given B1's erratic recent activity, the sooner the better for Sky NZ which relies totally on B1 to serve its 600,000+ DTH subscribers. D1 is more than a replacement for an aged B1; it brings with it additional spectrum in the 11.7 to 12.2 GHz region (so-called 'Broadcast Satellite Band' - BSB), making it possible for Sky

NZ (or others) to expand beyond the present 12.25>12.75 GHz downlink region. To use these additional transponders, Sky would of course be required to changeout existing STBs and/or LNBf devices that were designed only for the upper band. D2 is scheduled to be launched after D1 to co-locate at 156E, with 2-1/2 year old C1. D2 brings two elements to the party; a redundant 12.25>12.75 (which is characterised as an "emergency back up for Sky NZ") and 11.7>12.2 as new transponder space. The additional spectrum gives Foxtel, Austar, even Aurora new room to grow beyond the present 12.25>12.75 of C1. Like D1, use of the new expanded spectrum in Australia will require new STB and LNBf (dual frequency so that 12.25>12.75 ends up at 950>1450 as at present while 11.7>12.2 is 'stacked' above at 1600>2100 [MHz]). Only older model STBs lack the 1600>2100 ability although an estimated half million LNBf devices will require retrofitting (new installations already have the second LO). Simultaneously, new Sky NZ LNBf installs are dual LO and include a second 4 degree offset feed to allow selectable reception from B1/D1 at 160E or C1/D2 at 156E. D2's launch date is also indefinite, it could be as late as the end of 2007 as unlike the B1>D1 requirement, there is no present urgency to have it flying.

Both D1 and D2 are relatively unsophisticated spacecraft, characterised by the term "fairly simple" (the comparison was to the recently activated IPSTAR satellite which no-one would ever call "fairly simple"), limited (Australia and NZ) footprints, smaller frames, less complex solar arrays. Slightly higher output will be available on both - 150 watt TWTA (travelling wave tube amplifiers) versus C1's 110 watt models.

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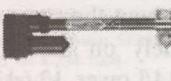
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search for the WiFi wireless signal. This is a Boeing developed system. A competitive technique uses the existing in-seat 'entertainment system' network (currently with Air NZ allowing choice of several dozen movie and programme channels plus an equal number of audio channels), under development by Rockwell Collins." (LM, Auckland) (Editor's note: Having TV2Me in your seat across the Pacific looks to be a mid-2006 adventure.) "While the Fijian government continues to dodge the issue of authorising additional television service providers (Fiji TV and their DTH service Sky Pacific being the only commercial service presently authorised), pressure is mounting from would-be service providers. 'TV2 Fiji' has proposed using a single 6 Mbps I701 satellite link (C-band) to create one national service feed of FTA television, augmented by three regional cut-away services; one each for Nadi/Lautoka/Sigatoka/Ba, another for Vanua Levu and for Suva/Nausori/Coral Coast. The single programme channel feed would allow local commercials and local news for each of the three coverage areas, using regional terrestrial transmitters. The satellite service would be primarily a 'link' although viewers located where terrestrial reception was not possible would have access to it as well. The Fijian government, which has a dollar-stake in Fiji TV, has repeatedly responded, 'We are studying the various applications'. " (KH, Suva) "War Driving" is the latest Sydney craze involving piracy and WiFi networks. Using cars equipped with multiple laptops, appropriate antennas, pirates drive the streets looking for unprotected WiFi networks who have retained their encryption and passwords at default settings. This allows them to steal the WiFi access information, gain access to the Internet without be traced". (NS, NSW) "According to at least one Australian source, the

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promised advent of DAB radio using the Eureka format will be in both band III (high band VHF) and also L-band (SF#135, p. 4). And the primary transmitters will be on band III, not L-band." (IF, Qld.) (Editor's note: Leave it to Australia to create a totally unique system for the future of DAB radio! Eureka is a transmission loading format, akin to COFDM. It can be employed at virtually any frequency band. But to have both band III (174-230 MHz) and 1452 + MHz transmitters will of course require that all car equipped receivers have both bands combined in a single radio; VHF + microwave in one box. This should double the price, and many will opt for the band III cheaper versions only. Not the best plan, in our view. Dual-banding seems to be apart of other Australian plans as well, as the follow indicates.) "Telstra's future mobile network will apparently rely upon 850 MHz band for voice communications but Internet data and video will use a separate (likely higher) band. I would hope this is not L or C band!" (AI, Victoria) (Editor's note: Two [or even three] band handsets are certainly not beyond the limits of present technology but the significant variations in coverage between 850 MHz and say 1.9 or 3.5 GHz is an unchangeable law of physics. To duplicate 850 MHz coverage at 1.9 requires four times as many transmission [cell] sites while at 3.5, 16 times as many. If this trend continues, we'll have cell sites on every half-block of major cities!) "We have produced a ten minute film entitled, 'Satellite Industry Pioneers' on our new website (<http://chaparral.com>). (Robert Taggart, Chaparral Communications.. USA) (Editor's note: Click on 'View Movie' and enjoy - Taggart's positioning of himself as the 'creator of home dish systems' which, while we might debate with him, is good TVRO history none the less. His place in TVRO history is affirmed in 'VIDEO PIRATES: - page 32, here; Rebel? Indeed!) "150 technicians from NSW, Victoria, Tasmania, South Australia attended a seminar ("DTV 3 Years Later") at Holmsglen TAFE, suburban Melbourne, 14 November. Presenters included Laceys.tv product specialists Mark Bryant, Leon Senior, Pietro Casoar and Peter Lacey plus guest presenter John Hill from Channel 7 engineering. Broadcast engineers representing the 3 commercial TV networks in a panel which responded to technical questions was a highlight of the event. Peter Lacey commented after the event, 'A representative from Unaohm expressed surprise that virtually all attendees stayed for the full day!'" (EA, Victoria) (Editor's comment: Sessions such as this transfer maximum information in the shortest time; broadband data indeed!)

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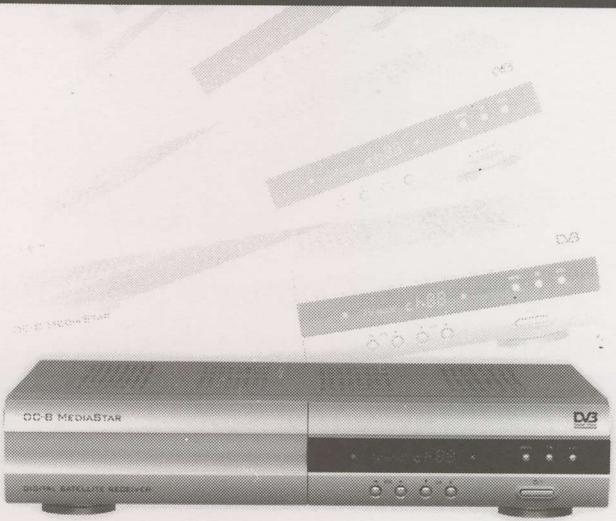
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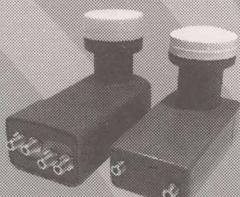
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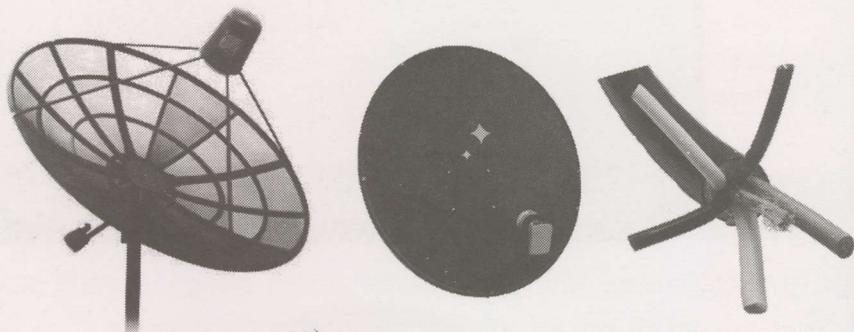
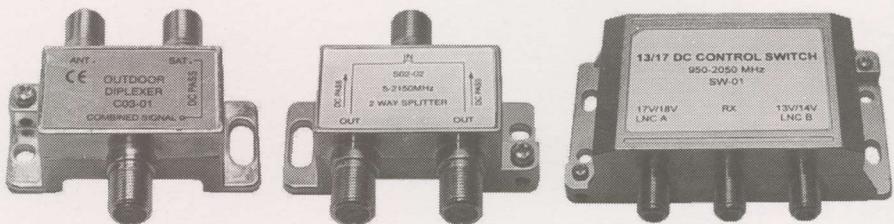
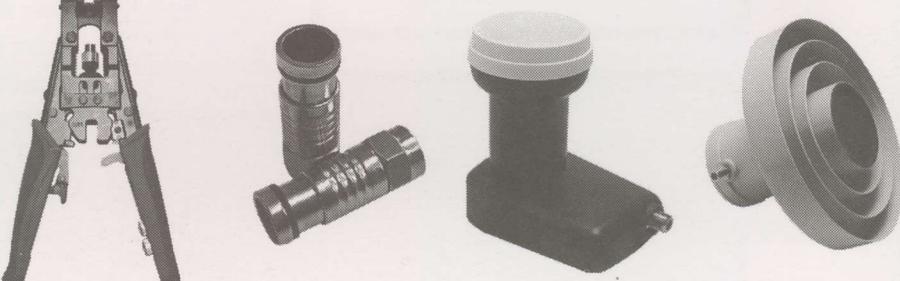
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